



TURQUOISE HILL

# 2019 Annual Report









An aerial view of the Oyu Tolgoi above ground infrastructure, including Shaft 2, that is supporting the Underground Development and future production of the Hugo North underground deposit.



# Turquoise Hill

Turquoise Hill is an international mining company focused on the operation and further development of the world class Oyu Tolgoi copper-gold mine in Southern Mongolia.

At full capacity, Oyu Tolgoi is one of the largest copper mines in the world.



The Oyu Tolgoi open-pit operation. In production since 2012, the Oyu Tolgoi open-pit processes 40 million tonnes of material annually.





When completed, the Oyu Tolgoi Underground network of tunnels built to access and mine the ore-body, will exceed 200 kilometres.

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A memorial monument is now standing beside the Oyu Tolgoi's open pit mine named after the late D. Garamjav to commemorate his everlasting legacy and pivotal role in the exploration and survey of the Oyu Tolgoi deposits.

Bactrian camels of the Gobi Desert, one of the few animals that can survive in the great heat and extreme cold of the Mongolian Gobi.







## Letter from the Chairman

2019 was another year of progress for Turquoise Hill Resources and our Oyu Tolgoi mine with respect to both the productivity and safety. I would like to commend our whole team for their accomplishments, especially our Mongolian workers – which make up over 93% of our workforce.

We faced notable challenges as well, as we advised our shareholders that the schedule and cost estimates originally established to reach first sustainable production from our underground operations would need to be revised, pushing back the original timing and increasing the overall cost estimate for the Underground Development. We are aware that this development had a significant impact on our share price, and we are focusing our efforts on establishing an updated timeline and cost estimate to complete the Oyu Tolgoi underground development and initiate production. We believe that this is a necessary step for shareholders to realize the asset's full long-term potential.

Our safety ethos has long been “if it cannot be done safely, it will not be done,” and this holds true for all aspects of our business. Safety continues to be the top priority at Oyu Tolgoi, where our All Injury Frequency Rate (AIFR), a key metric used to compare safety performance amongst the global mining operations, remains best-in class at 0.16.

Our Oyu Tolgoi workforce also achieved a strong year operationally by meeting our copper guidance and materially exceeding our original forecast gold guidance. The excellence of our open-pit operation reflects the continued discipline and commitment from our workforce, the completion of the Underground Development to access the Hugo North deposit, approximately 1.3 kilometres below surface, is where the substantial value of Oyu Tolgoi lies. The average grade of the underground reserves is over

three times the open pit and thus, when operating at full capacity, is expected to generate significant free cash flow for Turquoise Hill.

A key milestone towards the progression of the Underground Development was the completion of Shaft 2 in October, 2019. Shaft 2 uses the world's largest production hoist motor that can carry 300 workers down 1.3 kilometres in two and a half minutes. The production hoist is equally as impressive with the capability of hoisting 60tonne skips at 59 km/hr. Shaft 2 was completed with a predominantly Mongolian workforce of 2,500 people and took approximately 2.6 million hours to complete. These facilities have substantially improved productivity which enables the acceleration of the Underground Development as we move into 2020.



In September 2019, the Board of Directors had its annual site visit to Oyu Tolgoi at which time we inspected the underground workings and met with the technical team to gain a more in-depth understanding of the technical and timing issues which has slowed development. It was evident from this visit that there are strict controls in place and that worker safety continues to be a priority. We remain totally committed to the completion of the Oyu Tolgoi project and in the second half of 2020 expect Rio Tinto, the project contractor, to deliver the Definitive Cost Estimate and the revised timeline for completion.

The focus on sustainability is also one of our core values as we look to protect the environment and to safeguard the health and safety of all employees and communities impacted by Turquoise Hill and Oyu Tolgoi. Oyu Tolgoi remains one of the most water-efficient mines in the world with a water recycle rate of over 87% in 2019. Our biodiversity program has progressed well since 2015 with 2019 surveys showing a significant increase in the populations of the khulan and Goitered gazelle in the region.

Oyu Tolgoi has also had, and continues to have, a positive impact on the communities surrounding the mine. In Khanbogd, the partnership with Oyu Tolgoi led to the connection of the town to a permanent power supply, funding for new educational and healthcare facilities, sealing of local roads, and development of programs which help improve social conditions.

The US/China Trade negotiations dominated the headlines for much of 2019 which has continued to put pressure on the copper price. We continue to see, however, an increased demand for copper from an expanding renewables and Electronic Vehicle market. 2020 is expected to be the third year in a row of a supply deficit with an expectation we could see a structural deficit in copper supply by mid-2020's. This timing coincides with the expected ramp-up of our underground operations.

I would also like to recognize the extraordinary situation of the COVID-19 pandemic as we begin 2020. As a company, we have been carefully monitoring the rapidly evolving global response to this situation and have expanded our safety procedures to address this situation.

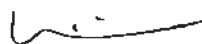
During 2019 we recruited a new member of the senior management team with the addition of Jo-Anne Dudley as Chief Operating Officer replacing the retiring Brendan Lane. Ms Dudley has over 25 years of experience in the mining industry and over the last 9 years has been a key member of the Rio Tinto Oyu Tolgoi team. Ms Dudley has proved to be a strong addition to the senior executive group. Also, during 2019 we consolidated the senior staff in new premises in Montreal. This has combined the corporate and finance functions in one location which has improved effectiveness.

Turning to the Turquoise Hill Board of Directors, Jim Gill resigned from the Board of Directors in July 2019. We thank Dr. Gill for his contribution to Turquoise Hill over his 5-year tenure. In January of 2020 George Burns was appointed as an independent director. Mr. Burns is an accomplished mining engineer with an extensive forty-year career in gold, copper and coal mining.

Although our share price performance in 2019 was disappointing, we are proud of the dedicated team who are working tirelessly to execute on the construction, production and financial goals in addition to our sustainability and conservation efforts – efforts fully supported by the Board. We can assure stakeholders in Turquoise Hill that management and the operating and construction teams are committed to the successful completion of Oyu Tolgoi. This will result in benefits to all our stakeholders and should result in accretive value recognition for Turquoise Hill shareholders.

Thank you for your continued support of Turquoise Hill. I look forward to updating you with further progress in 2020.

Sincerely,



R Peter Gillin



## Letter from the CEO

2019 was my first full year as CEO of Turquoise Hill Resources and it was a year characterized by both notable achievements and challenges. Whilst we have been able to deliver a compelling safety performance as well as executed strongly on operational excellence, we have to acknowledge the setback caused by the delay in the completion of Shaft 2 and sustainable first production, and its impact on our stock price. Clearly that was disappointing. The sheer economics and upside of the Oyu Tolgoi project are compelling, so it is understandable that any delay in ramping up the underground development would have an impact on Turquoise Hill's stock price. Indeed, following our update in July that the underground development would require a new mine design and would face delays, we saw a material drop in stock price.

A new mine design is necessary for the safety of our workforce and the realization of the long-term potential of the Oyu Tolgoi mine for all stakeholders. We are continuing to work on the new mine design and expect it to be completed in the first half of 2020. Following that, we will provide a more robust Definitive Estimate in the second half of 2020 that will clarify cost and schedule guidance.

In the interim, the Oyu Tolgoi open pit continues to operate at above name-plate capacity delivering value to shareholders, employees and the people of Mongolia.

### Safety

Safety remains our first priority and is critical to our continued success. The Oyu Tolgoi open pit and underground development achieved another strong safety performance this year. The All Injury Frequency Rate of 0.16 per 200,000 hours worked for 2019 is best-in-class amongst our peer group and reflects the 'safety first' commitment that is driven into the Oyu Tolgoi culture through every aspect of the operations.

### Production and Revenue

2019 was another solid year with full year copper production of 146,346 tonnes versus the original guidance range of 125,000 – 155,000 tonnes and full year gold production of 241,840 ounces versus the original guidance range of 180,000 – 220,000 ounces.

Full year mill throughput of 40,777,225 tonnes, was an increase of 5% over 2018, and the fourth year in a row that the concentrator operated above design capacity of approximately 100,000 tonnes of ore processed per day. Revenue for 2019 of \$1.17 billion was a 1.2% decrease over 2018 primarily due to the 8% decrease in copper production reflecting the transition from mining Phase 4A to lower grade

Phase 4B and stockpiles, while Oyu Tolgoi's C1 cash costs in 2019 were \$1.37 per pound of copper produced, a decrease from \$1.59 per pound of copper produced in 2018.

### Delivering Shaft 2

Turning to the underground development, we announced on July 15 that sustainable first production could be delayed by 16 to 30 months, and the development capital spend for the project may increase by \$1.2 billion to \$1.9 billion over the \$5.3 billion previously disclosed. We continue to work on a new mine design and anticipate completion during the first half of 2020, and the Definitive Estimate, which will include the estimate of cost and schedule for the underground project based on the updated design, is still expected to be delivered in the second half of 2020.

A critical piece of infrastructure that will accelerate the underground development, Shaft 2, was completed in October 2019. Shaft 2 is a 10-metre diameter shaft sunk to approximately 1.3 kilometres below the surface and uses the world's largest production hoist motor to carry 300 people in the service hoist, and lift 60-tonne skips in the production hoist. When operating at maximum capacity, the production hoist has the ability to lift 35,000 tonnes of material to the surface daily. The completion of the construction of Shaft 2 is a significant milestone in the underground development and has allowed us to begin the movement of Underground development material to surface.

Shaft 2 was constructed using almost 5000 tonnes of steel and over 300 kilometres of electrical cabling. Importantly, the shaft was sunk and constructed with a predominantly Mongolian workforce, developing specialized skills and demonstrating the capability of the local work force. As at the end of 2019, Oyu Tolgoi had a total workforce of 13,800 of which over 93% are Mongolian.



Extensive focus on productivity in the most critical development areas over the second half of 2019 has reaped substantial improvements. Underground development progressed 4.8 total equivalent kilometres and completed 9 cubic kilometres of mass excavation during the fourth quarter alone, and since the restart of underground development, 32.9 total equivalent kilometres and 155.3 cubic kilometres of mass excavation kilometres have been completed. We are encouraged by the progress and we look forward to the incremental capacity of Shaft 2 continuing to accelerate the progression of the underground mine.

### **Government of Mongolia**

In 2019, the Parliamentary Working Group of the Government of Mongolia completed its review of various aspects of key contractual Oyu Tolgoi arrangements. Ultimately, this culminated in parliament passing a resolution in December which requires the Government to implement a set of recommendations in cooperation with Turquoise Hill, Rio Tinto and Oyu Tolgoi. We look forward to progressing these discussions with the Government to arrive at a mutually satisfactory conclusion.

### **Power**

Securing a competitive and reliable long-term power supply is fundamental to the development of a world-class long life mine like Oyu Tolgoi. We continue to work with our partners, Rio Tinto and the Government of Mongolia, to develop a domestic power supply solution in accordance with the objectives and requirements set out in key contractual agreements such as the Power Source Framework Agreement (PFSA). In January, Oyu Tolgoi LLC submitted a feasibility study for a coal based Tavan Tolgoi Power Plant, whilst at the same time we continue to investigate other options including but not limited to a renewables-based solution. Ultimately, the stakeholders are seeking to procure Oyu Tolgoi with the best possible power solution that also satisfies the needs and requirements of the Government of Mongolia.

### **Funding Oyu Tolgoi**

As at the end of 2019, Turquoise Hill expects to have enough liquidity to fund its operations and underground development, including progression of the proposed Tavan Tolgoi-based power plant, into Q2 2021. The impact of the delays to first sustainable production of our underground Hugo North orebody, will require Turquoise Hill to raise a significant amount of capital to complete the underground development and fund the construction of the proposed power plant. Turquoise Hill and Oyu Tolgoi LLC have the option to raise additional external financing subject to required approvals, and will work with the existing stakeholders to secure the required funding.

### **People**

In June 2019, we announced the appointment of Jo-Anne Dudley as Chief Operating Officer. Ms. Dudley has 25 years of experience in the mining industry and for the past nine years she has been a key member of the Oyu Tolgoi technical team that manages the development of Oyu Tolgoi. Most recently she led Oyu Tolgoi's 30-person Strategic Mine and Resources Planning unit. Jo-Anne's extensive experience in underground mine development, at Oyu Tolgoi and elsewhere, will be of great value to Turquoise Hill and its shareholders.

### **Delivering on our promise to be a good corporate citizen**

Oyu Tolgoi LLC continues to be Mongolia's largest copper and gold mining company and has spent over US \$10 billion in-country since 2010, marking the largest foreign investment made in the country. This in-country spend has made a substantial contribution to the country's economic development through taxes, salaries and local procurement. For example, Oyu Tolgoi's worker's uniforms are manufactured by a sewing factory in Khanbogd, their gloves made in Dalanzagdad, and their work boots are made in Ulaanbaatar. In addition, Oyu Tolgoi LLC has completed over 100 projects including schools, kindergartens, community facilities and roads in partnership with the Gobi Oyu Development Support Fund. Our commitment to protecting the environment can be seen through our water conservation standards and our work with local government. Oyu Tolgoi has been designed as one of the most water-efficient mines in the world with average water use of 0.39 cubic metres of water per tonne of ore processed in 2019. Through the Development Support Fund with local Governments, Oyu Tolgoi has created 77 new water sources that can improve pasture usage in the Gobi Desert region for over 200 herder families with 140,000 livestock.

Albeit 2019 was a challenging year for our shareholders, we have continued to focus on progressing the Oyu Tolgoi Underground Development towards completion. Once the underground is at full capacity, Oyu Tolgoi is expected to be the third largest copper mine in the world and will generate significant free cash flow for shareholders, which in turn, makes Turquoise Hill one of the few 'pure play' copper companies in the world. Our senior management team and board are appreciative of input from our shareholders and are committed to enhancing our corporate value while meeting or exceeding the expectations of our shareholders.

Sincerely,



Ulf Quellmann

# Company Profile

Turquoise Hill is an international mining company focused on the operation and continued development of the Oyu Tolgoi copper-gold mine in Mongolia, which is the Company's principal and only material mineral resource property. Oyu Tolgoi is one of the world's largest new copper-gold mines and is located in the South Gobi region of Mongolia, approximately 550 kilometres south of the capital, Ulaanbaatar, and 80 kilometres north of the Mongolia-China border.

Consisting of five known mineralized deposits Oyu Tolgoi has the potential to operate for approximately 100 years. The first of those (the Oyut deposit) was put into production as an open-pit operation in 2013.

A second deposit, Hugo North (Lift One), is under development as an underground operation while the other three deposits, Hugo North (Lift Two), Hugo South and Heruga, are not yet scheduled for development.

When the Hugo North (Lift One) underground reaches peak production, Oyu Tolgoi is expected to be the world's third largest copper mine.



Oyu Tolgoi Open Pit operation moves over 100,000 tonnes of material per day.





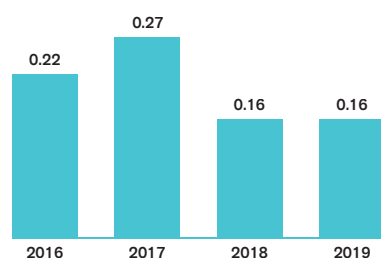
Underground  
mass excavation  
for the primary  
crusher 1

Underground lateral  
tunnel at Shaft #1  
workshop.



Safety is a top priority and is critical to our continued success. Oyu Tolgoi's workforce has delivered industry-leading safety statistics for several years. The All Injury Frequency Rate (AIFR) is an indicator of workplace health and safety and provides insight into an organization's efforts to protect its workforce from work-related hazards. For 2019, the Oyu Tolgoi mine achieved another strong AIFR of 0.16 per 200,000 hours worked. The injury rate steadily declined since 2013, dropping 64% from 2013 through 2019.

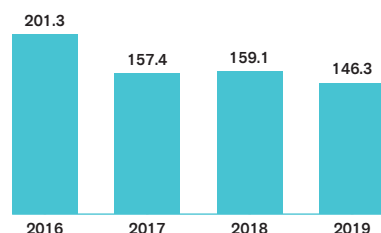
## All Injury Frequency Rate (Per 200,000 hour worked)



In 2019, Oyu Tolgoi continued to progress and deliver important milestones for the underground mine development and make a significant contribution to the Mongolian economy, passing US\$10 billion of in-country spend. As of December 31, 2019, over 93 per cent of Oyu Tolgoi's workforce of 13,800 were Mongolian with more than half working on the development of the underground mine.

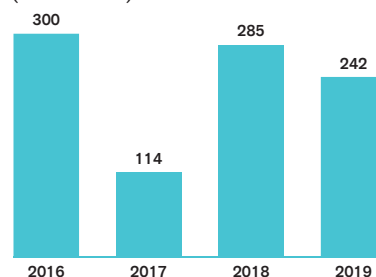
Oyu Tolgoi copper concentrate production of 146,346 tonnes fell within our original guidance, while our gold concentrate production of 241,840 ounces exceeded our original targets.

## Production of Copper in Concentrates ('000 tonnes)



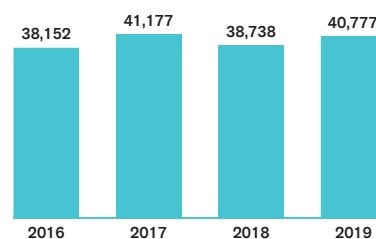
## Production of Gold in Concentrates

('000 ounces)

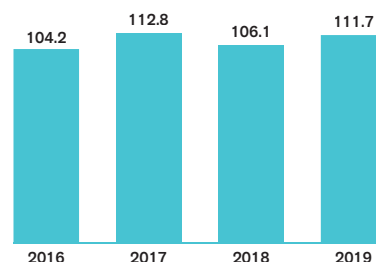


Ore treated in 2019 increased 5% over 2018 due to overall feed hardness being lower as a result of increased Phase 4B ore and Phase 6B ore; and lower grade stockpile material feed in blending. Over the last four years, Oyu Tolgoi has consistently exceeded the concentrators name-plate capacity of approximately 100,000 tonnes of ore processed per day.

## Ore Treated ('000 tonnes)



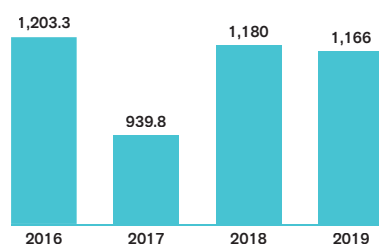
## Average Daily Concentrator Rate ('000 tonnes)





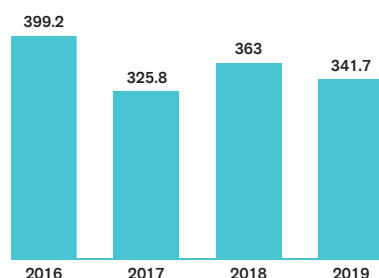
Revenue for 2019 decreased 1.2% over 2018 due to the impact of low copper production partly offset by higher gold revenue driven by a higher average annual gold price in 2019.

#### Revenue (\$ in millions)



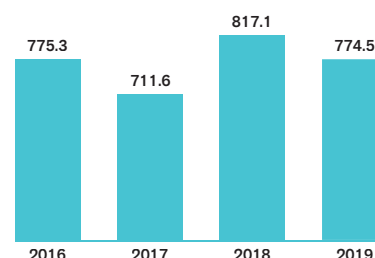
Operating cash flow for 2019 decreased 5.9% over 2018 primarily reflecting the impact of lower sales revenue and unfavorable movements in working capital.

#### Operating Cash Flow (\$ in millions)



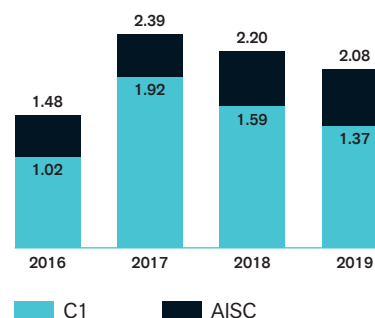
Operating cash costs for 2019 decreased 5.2% over 2018 due to low freight and royalty costs driven by lower sales volumes and sales revenue, lower milling costs due to lower maintenance costs. These were partly offset by higher increased power study costs in 2019 compared to 2018.

#### Operating Cash Costs (\$ in millions)



C1 cash costs for 2019 decreased 13.8% over 2018 mainly due to higher gold sales. All-in sustaining costs in 2019 decreased 5.5% over 2018 due to the same factors that led to the lower C1 cash costs. This was partly offset by higher sustaining open pit capital which was driven by higher capitalized deferred stripping in 2019 resulting from an increase in the proportion of waste removed and higher major parts costs.

#### C1 and All-In Sustaining Costs



## 2019 in review

2019 was another strong year for the Oyu Tolgoi operations. Revenue from the Oyu Tolgoi open-pit for 2019 was US \$1.2 billion, driven by the production of 146,346 tonnes of copper, and 241,840 ounces of gold. The Oyu Tolgoi team continues to strive for productivity gains and has operated the concentrator at above name-plate capacity for the fourth year in a row.

While 2019 productivity gains were strong, safety for our Oyu Tolgoi workforce is the most important measure and is critical to our success. The Oyu Tolgoi open pit and Underground Development recorded another best-in-class workforce All Injury Frequency Rate of only 0.16 per 200,000 hours worked.

As the Open-pit operations continue to demonstrate excellent performance, the Underground Development of Oyu Tolgoi has continued to progress through the year with the construction of Shaft 2 being completed in October 2019. Shaft 2 is a 10-metre diameter shaft sunk to approximately 1.3 kilometres below the surface and uses the world's largest production hoist motor that can carry 300 people in the service hoist, and lift 60 tonne skips in the production hoist. When operating at maximum capacity, the production hoist has the ability to lift 35,000 tonnes of material to the surface daily. The completion of Shaft 2 is a significant milestone in the underground development and is now being utilized to move Underground development material to the surface.

Construction is progressing on shafts 3 and 4 with both collars now installed. Final preparations are now underway to enable commencement of main sinking operations for both shafts during the second quarter of 2020.

Extensive focus on productivity gains on the most critical development areas through the second half of 2019 has reaped substantial improvements. Since the restart of underground development, 32.9 total equivalent kilometres and 155.3 cubic kilometres of mass excavation kilometres have been completed, and we look forward to the incremental capacity of Shaft 2 continuing to accelerate the progression of the underground mine.

Detailed analysis work on the final mine design is still anticipated to be completed during the first half of 2020, and the Definitive Estimate, which will include the estimate of cost and schedule for the underground project based on the updated design of Panel O, is still expected to be delivered in the second half of 2020.



The entrance gates to the Shaft 2 Production Hoist at surface level.



Shaft 2 is a critical piece of infrastructure that will accelerate the underground development. The 10-metres diameter shaft sunk to 1.3 kilometres below surface, is one of the largest shafts in the world. The full shaft completion, from sinking through to equipping, has taken 3 years 4 months and approximately 2.6 million hours worked by 2,500 people.

# Shaft 2







60  
tonne  
capacity  
skips

300  
person  
capacity  
cage

300  
kilometres  
of electrical  
cabling



# Shaft 2

Shaft 2 is a world-class marvel of engineering for a world-class mine. Towering over the plains of the Gobi Desert, the Shaft 2 headframe rises 96 metres from the ground, while the shaft itself sinks another 1,284 metres below surface towards the Hugo North ore body.

The Shaft 2 headframe itself is the height of the Statue of Liberty, while the entire Shaft 2 is the equivalent height of 4 Eiffel Towers. The inside diameter of Shaft 2 is 10 metres, making it one of the largest shafts in the world.

From the initial sinking to the final construction of Shaft 2, it took three years, four months and approximately 2.6 million hours worked by approximately 2,500 people to complete this epic project. Close to 50 companies collaborated on Shaft 2 construction and required 7.8 thousand cubic meters of dry cement, 4.8 metres tonnes of metal structures and 15.4 thousand metres of metal pipes.

Shaft 2 uses the largest friction hoists in the world, one for service and one for production. The Service hoist has a double-deck cage that can carry 300 workers at a time and will travel the 1.3 kilometres distance in 2.5 minutes at a speed of 10 m/s (36 km/hr). The Production hoist has two skips, each with the capacity to hoist 60 tonnes of ore and travel at a maximum speed of 16.4 m/s (59 km/hr).

The winders for the hoists are 6.7 metres in diameter and weigh 56 tonnes each and use 32 kilometres of steel wire ropes that alone weigh 5,000 tonnes. The Rope-up process (installation of the steel ropes) took 23 days by a team of approximately 500 people and was one of the safest and most efficient rope-ups anywhere in the world.

The construction of Shaft 2 is a significant milestone in the underground development of the world class Oyu Tolgoi mine. Completion of the service hoist has enabled additional crew, material and equipment to be transported and has accelerated the underground development, while the completion of the production hoist has allowed the movement of Underground development material to the surface. Importantly, Shaft 2 was sunk and constructed with a predominantly Mongolian workforce, developing specialized skills and demonstrating the capability of the local work force.

**10 m**  
diameter

**1.3 km**  
below the surface

**5000**  
tonnes of steel





Above ground infrastructure with Shaft 2 featured in the centre with the concentrator in the background.

The world's largest Koepe Friction Hoists.

Shaft 2 rope up process.





# Commitments

Turquoise Hill is committed to protecting the environment and to safeguarding the health, safety and welfare of all employees, contractors and communities who are affected by Turquoise Hill and Oyu Tolgoi.





Turquoise Hill is also committed to minimizing and mitigating the mine's operational impact on the environment while continuing to uphold the highest environmental standards and drawing advice of environmental experts as well as local communities. Our Oyu Tolgoi workforce is made up of over 93% Mongolian nationals.



## Strong Sustainability

Turquoise Hill is committed to protecting the environment and to safeguarding the health, safety and welfare of all employees, contractors and communities who are affected by Turquoise Hill and Oyu Tolgoi. The Company is dedicated to performing its duties in a safe, environmentally responsible and effective manner.

Turquoise Hill supports and respects human rights consistent with the Universal Declaration of Human Rights and seeks to ensure that it is not complicit in human rights abuses committed by others. The Company respects and supports the dignity, well-being and rights of its employees, their families and the communities in which it operates.

Turquoise Hill also sets out to build enduring relationships with its neighbours that demonstrate mutual respect, active partnership, and long-term commitment. The Company respects the diversity of indigenous peoples, acknowledging the unique and important interests that they have in the land, waters and environment as well as their history, culture and traditional ways.

Oyu Tolgoi's commitment to operating in a sustainable way is unshakable. Oyu Tolgoi is also committed to minimizing and mitigating the mine's operational impact on the environment while continuing to uphold the highest environment standards and drawing of the advice of environmental experts as well as local communities.

Since 2010, Oyu Tolgoi has been developing a Health, Safety and Environmental management system in compliance with ISO 14001 Environmental and OHSAS 18001 Occupational Health and Safety management standards. In 2013, Oyu Tolgoi was independently audited and received certification on these standards.



Suman river, Arkhangai, a tributary of Chuluut river.

Mongolian khulan, near the Oyu Tolgoi mine. Oyu Tolgoi has been supporting the conservation efforts since 2013, including the protection of 880,000 square kilometres of khulan and Gazelle habitat.



# Safety

## Safety

Safety is Oyu Tolgoi's core value and is part of everything they do. Safety is not about numbers - it's about people. Underground development by its nature increases specific levels of safety risk and reinforces why safety is Oyu Tolgoi's main priority. The All Injury Frequency Rate (AIFR) is an indicator of workplace health and safety and provides insight into an organization's efforts to protect its workforce from work-related hazards. Oyu Tolgoi's 2019 AIFR of 0.16 per 200,000 hours worked was a best-in-class outcome and has steadily declined since 2013, dropping 64% from 2013 through 2019. By implementing robust programs and processes, Oyu Tolgoi LLC has created a workplace and culture that focuses on health and safety as its top priority. Oyu Tolgoi's approach to safety consists of the following areas.

**Leadership** — Leadership is central to Oyu Tolgoi LLC's approach to safety with leaders expected to create and promote a safe work place by being present in the field and highly engaged with their teams. A number of tools are utilised to help leaders integrate safety into their activities and to become champions of safety improvements. Employees are encouraged to become safety leaders within their own teams and to take personal responsibility for their own safety and that of their colleagues.

**Culture** — Oyu Tolgoi LLC is working to establish a safety culture that aligns organisational and individual employee values to create a positive culture that drives consistent behaviour. All individuals at Oyu Tolgoi should feel comfortable to stop work if they feel it is unsafe to continue. Every meeting at Oyu Tolgoi starts with a "safety share", a chance for employees to briefly describe any safety-related issue and to listen to constructive advice from colleagues who have faced and resolved similar issues.

**Systems and processes** — Oyu Tolgoi LLC seeks to adopt best practice safety management systems to deliver world-class safety performance. Oyu Tolgoi's standards are aligned with broader Rio Tinto safety standards providing a framework to measure, monitor and continuously drive improvement in safety performance. Oyu Tolgoi LLC has successfully embedded the Kaizen process into business improvement activities to enable teams to identify and eliminate elements of work that do not add value or are obstacles to efficiency or safety. Examples of Kaizen process initiatives include elimination of root causes that may trigger failures of critical controls and identification of opportunities to improve the concentrate bagging process and border procedures.





**Risk management** — Given the scale and complexity of Oyu Tolgoi, the workforce face significant risks that must be managed carefully. Proactive measures are taken to control risks by identifying hazards, assessing the risks they pose and using controls to prevent damage and harm. Oyu Tolgoi LLC's systems use risk assessments and controls for all tasks and utilise a variety of different tools to help manage risks in their workplace. An example of risk management innovation is the integration of the geographic information mapping system with high risk work activities to provide the emergency response team live location and work status. Oyu Tolgoi LLC has a strong focus on critical risk management – controlling the risks that are the most serious, i.e. those that could lead to fatality or permanent injury. Over 175,000 critical risk management verifications were completed by Oyu Tolgoi LLC during 2019. Over 76,000 critical risk management verifications were completed in the Operations area and over 199,000 conducted by the Underground project during 2019.

**Training and awareness** — A key component of Oyu Tolgoi LLC's approach is that each employee receives the training, skills and knowledge required to perform their job safely. This is provided via a combination of classroom and on-the-job courses and training. In 2013, Oyu Tolgoi LLC opened a risk demonstration centre, the first of its kind in Mongolia, which uses interactive demonstrations and activities to show the potential consequences of the risks faced. Safety campaigns run continuously throughout the year to highlight key operational risks including working at heights, hand safety, electrical safety and others.

**Employee and contractor engagement** — Oyu Tolgoi LLC actively encourages employee and contractor participation in all aspects of safety management. Contractors are required to adhere to the same safety standards as Oyu Tolgoi LLC employees with a team dedicated to managing contractor safety performance. Regular contractor engagement conferences provide an additional forum to share safety approaches with contractors.

The ongoing demobilisation of contractors and sub-contractors from the Project site is being actively managed by a multi-disciplinary working group tasked with the implementation of a comprehensive ramp down strategy. The working group is working to ease the transition process and ensure fair and respectful treatment of personnel leaving the Project workforce. The group includes both OT Underground Owner's team, OT Operations External representatives, along with EPCM subject matter experts.

## Water

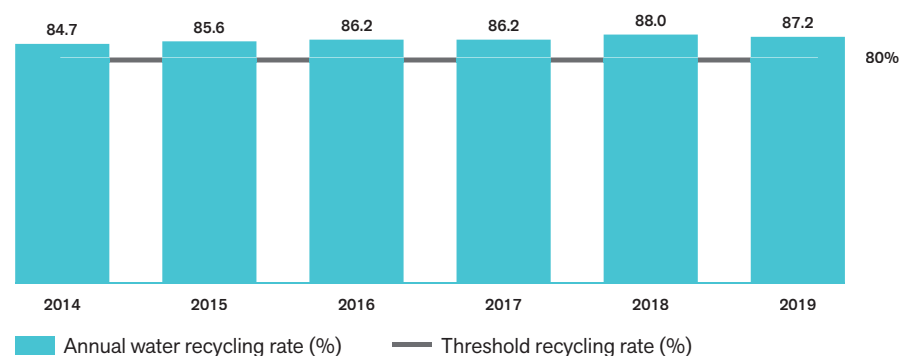
In the South Gobi desert, water is the most precious natural resource. To ensure ongoing availability of surface water, Oyu Tolgoi is committed to using water carefully, balancing the mine's operational needs while ensuring water is fully available for local residents and future generations.

Oyu Tolgoi operates some of the best water conservation standards worldwide, using less than half the global average of water per tonne of ore processed for similar mines. This means all of the water at Oyu Tolgoi is used and reused until it is lost through evaporation. Since 2014, Oyu Tolgoi has consistently achieved annual water recycling rates above the mine's targeted recycling rate of 80%.

Oyu Tolgoi has been designed as one of the most water-efficient mines in the world with average water use of 0.39 cubic metres of water per tonne of ore processed in 2019. The water used by Oyu Tolgoi comes from a deep and saline aquifer and has no impact on drinkable water in the region. In 2019, water used by Oyu Tolgoi has been continuously recycled at an average rate of 87.2%. An independent water audit is undertaken every five years, with the last audit completed in 2016. Compliance with water management and conservation policies, standards and legislation in 2019 was ensured through diverse processes including inspections from the Government of Mongolia as well as local community field verifications.

During the course of 2019, Oyu Tolgoi successfully sealed and rehabilitated 41 exploration water bores. These areas were handed over to the local government in cooperation with local communities. Using funding through the Gobi Oyu Development Support Fund, Oyu Tolgoi LLC began the implementation of a two-year project for the maintenance of current and creation of new herder wells. As part of the project, a total of 77 new wells have been created. These wells are used by herders as sources of water for their livestock and can substantially improve pasture usage in the Gobi Desert region.

Annual Water Recycling Rate



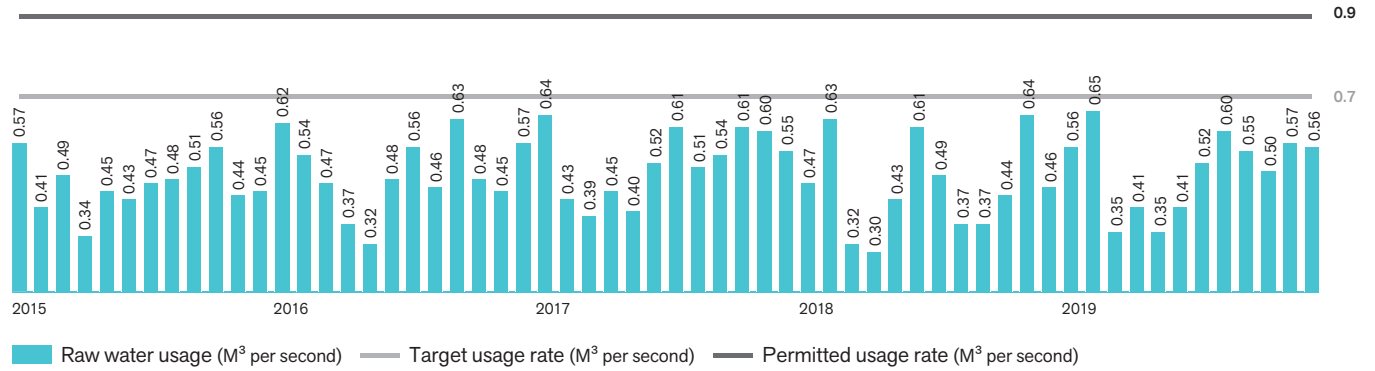
Water Day 2019  
event in Ikh bulag,  
Khanbogd Soum.



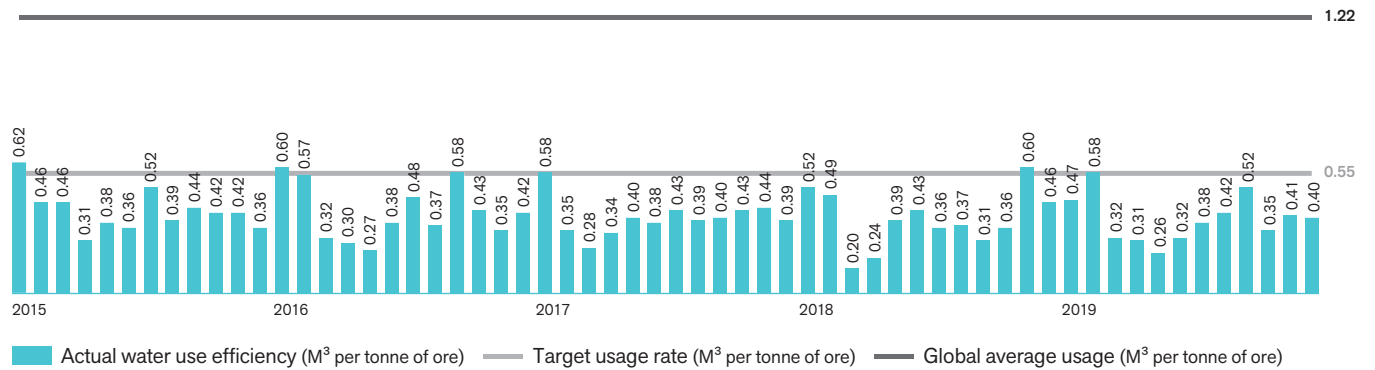
**As part of the existing water communications plan, Oyu Tolgoi LLC has undertaken various activities in 2019, including:**

- The celebration of "World Water Day" in cooperation with green clubs of Khanbogd school and local government;
- The organization of shoreline cleaning events for local water sources ;and
- The enhancement of three natural springs in the soums of Khanbogd.

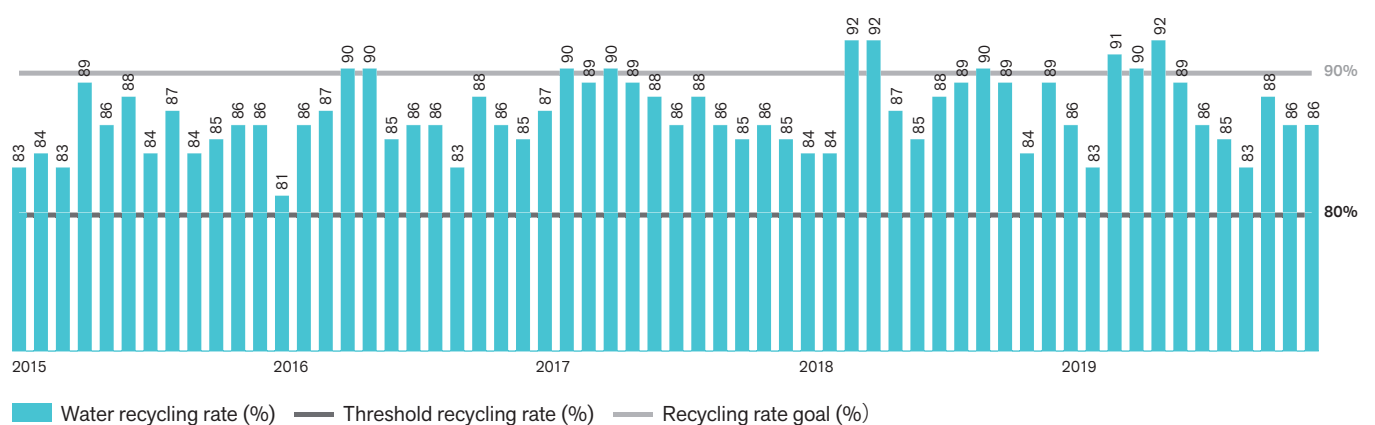
## Raw Water Usage



## Raw Water-Use Efficiency



## Monthly Water Recycling Rate





## Biodiversity

For Oyu Tolgoi, biodiversity refers to the variety of life on earth – the different animals, plants and micro-organisms, and the ecosystems they inhabit. Oyu Tolgoi's approach aims to minimize the mine's operational impact and contribute to biodiversity conservation so that the region ultimately benefits from the mine's presence.

Oyu Tolgoi LLC also works with international non-government agencies ("NGOs"), consultants and university researchers to ensure a net positive impact on biodiversity of the mine area. The annual biodiversity monitoring programs provide information to assess the effectiveness of the mitigation strategies that have been incorporated into the Oyu Tolgoi LLC operational management plans.

The Core Biodiversity Monitoring Program has progressed well in 2019 with a ground population survey covering around 79,000 square kilometres area of the South Gobi region. The capture of a total of 30 khulan and 20 goitered gazelles and the deployment of 50 satellite GPS collars provides insights into the movements and habitat use of these Gobi Desert ungulates and provides critical information for planning and assessing mitigation action.

The 2019 survey results indicated a significant increase in ungulate populations, specifically khulan and goitered gazelles. Khulan population increased approximately 42% (from ~36,300 in 2014 to ~51,700 in 2019) and the goitered gazelle population increased about 71% (from ~33,627 in 2015 to ~57,380 in 2019). We believe that both favourable weather conditions and our conservation efforts through the biodiversity offset program have contributed to this excellent outcome.

Oyu Tolgoi has implemented several biodiversity offsetting projects that contribute to making a net positive impact on biodiversity and ecosystem services in the region. An example of this is the anti-poaching offsetting project in which Oyu Tolgoi LLC is collaborating with local government agencies. This project started in 2015 as a pilot and continues to be a successful initiative. A Multi-Agency Team and a Mobile Anti-Poaching Unit were formed to improve and solve the difficulties that patrols face. The Anti-Poaching Unit consists of East, Central and West teams and patrol the Omnogobi and Dornogobi aimags. In addition, the rangers of the Small Gobi Strictly Protected Area A and B also carry out patrols in the protected areas close to Oyu Tolgoi.

Another important component of the anti-poaching project is the implementation of the Spatial Monitoring And Reporting Tool ("SMART") software package that is used to plan patrol efforts, monitor patrols, and document the location of carcasses found by the patrols. The information collected in the SMART system can then be used to assess patrol effectiveness. The effectiveness of the SMART system has enabled the Government of Mongolia to develop a working

group that is examining the expansion of SMART into other protected areas in Mongolia. To support the anti-poaching programs and overall management of endangered species in the region Oyu Tolgoi also conducts khulan carcass assessments. The khulan carcass survey runs every year to provide the project with relevant information regarding poaching and natural death rate of khulan within a 50,000 square kilometres area of Oyu Tolgoi. The main goal of this survey is to determine the density of poached carcasses in areas believed to be experiencing high rates of poaching and to use this information in planning anti-poaching patrols.

Other offset projects include powerline insulation in order to reduce bird mortality, development of sustainable cashmere and modification of railroad fencing to lower the impact on fauna. There were several significant achievements in the offsetting projects in 2019. The development of sustainable cashmere underwent a restructure to improve long-term viability and to ensure its success. As part of a pilot, the railroad fence project saw the successful removal of two sections of the railroad fence, totaling 1,200 metres. This achievement was made possible by the involvement of multiple stakeholders including representatives from the private sector, academia, civil society organizations as well as government organizations. Initial monitoring has captured Mongolian and goitered gazelles crossing the rail using the opening made in the fence. The monitoring of wildlife movements will continue in 2020.

The biodiversity team has organized stakeholder consultation workshops with significant input from local government officials, which helped them to gain a greater understanding of the underlying goals of offset programs and gained necessary support to continue these programs.



Groundbreaking of  
Khanbogd soum  
flood dam.



## Land Management

As part of Oyu Tolgoi's sustainable land management policy, the mine's closure and rehabilitation plans have been developed in accordance with Mongolian laws and standards. This keeps land degradation to a minimum.

### Land Disturbance Management

In order to ensure minimal land disturbance, Oyu Tolgoi requires an environmental inspection and assessment before any land disturbance occurs. A permit for work is only approved after protective actions identified in the assessment are completed. This process eliminates or minimizes potential impact on local water, biodiversity, the community, cultural heritage, and many other areas. It also ensures compliance with environmental and other relevant legislation. This procedure also applies to Oyu Tolgoi sponsored projects.

### Topsoil Management

The Oyu Tolgoi topsoil management plan is one of the most important elements in rehabilitating land affected by the mine's operations and infrastructure development, helping to restore vegetation and biodiversity.

Before the start of any land disturbance activity, Oyu Tolgoi strips and stores the topsoil so it can be used to rehabilitate the land after the work is complete.

### Environment rehabilitation

Areas that were disturbed during exploration, development and operations are rehabilitated during and after the project, including through the development of a mine closure plan at the start of the construction phase. Making disturbed areas safe for people, animals, and the environment is one of the main reasons for proper rehabilitation. To make an area safe, technical rehabilitation has to be completed to high standards. Oyu Tolgoi has a dedicated team to work with contractors to monitor rehabilitation.

Oyu Tolgoi continued its comprehensive environmental monitoring program and maintained compliance of key environmental programs. In 2019, planned biological rehabilitation was completed on 53 hectares of land associated with off-site construction works such as road construction. Technical rehabilitation was completed on an additional 108.3 hectares, which were handed back

to local government. In addition, Oyu Tolgoi LLC supports landscaping and greening of Khanbogd. The Oyu Tolgoi site landscaping project continued in 2019. A total of 1.34 hectares area of landscaping was completed in the Oyut camp, Mazaalai mess hall, North gate and Khanbumbat airport during the course of 2019 and these landscaping efforts will continue as per the Oyut village strategic plan. Oyu Tolgoi LLC also conducted a 1,500-tree planting campaign in Khanbogd. During the "Open Day" event, about 1000 saplings were given to local communities in Dalanzadgad.



Mazaalai kitchen bus stop.

## Greenhouse Gas Emissions

Oyu Tolgoi has implemented an Atmospheric Emissions Management Plan that outlines the applicable national, Rio Tinto and international standards and defines Oyu Tolgoi's key management atmospheric emissions controls. The plan also includes monitoring and reporting procedures. One of the key management controls is reporting on Oyu Tolgoi's greenhouse gas emission performance against the estimated emission targets. Oyu Tolgoi has a comprehensive greenhouse gas inventory and reporting process and continues to explore energy-saving opportunities through a registry focused on energy saving and greenhouse gas reduction initiatives.

Oyu Tolgoi LLC has been measuring monthly greenhouse gases (GHG) emissions since 2012 and completes an annual GHG workbook. Greenhouse gas emission control is constantly monitored and the performance for the year ended December 31, 2019 was 2.38 tonnes CO<sub>2</sub>/unit product against an annual target of 1.96 tonnes CO<sub>2</sub>/unit product. These emissions include both Scope 1 (direct emissions from owned and controlled sources) and Scope 2 (indirect emissions from the generation of purchased energy).

	2014a	2015a	2016a	2017a	2018a	2019a
Emissions intensity (actual)	2.40	1.85	1.70	2.18	2.06	2.38
Total emissions actual (tonnes CO <sub>2</sub> -e)	1,353,130	1,463,002	1,429,626	1,572,355	1,514,205	1,596,287

a = actual

Notes:

- (1) It should be noted that the emissions intensity per tonne of product measures reflects the tonnes of metal concentrate produced and is impacted by variability of the grade of the ore mined, which is a function of the orebody. 2020 is anticipated to be a lower-than-average grade year and the emissions intensity target reflects this.
- (2) All figures exclude the Underground development project emissions.

**Oyu Tolgoi LLC has been implementing programs and activities aiming to reduce its GHG emissions and to save energy since 2015. Such activities include:**

- Ending the use of Diesel generators for remote infrastructure, as providing permanent power supply at:
  - Training centre, Khanbogd soum, Umnugobi province (2015);
  - Marshall yard, OT mine site (2017);
  - Power camp, OT mine site (2018);
  - Emulsion plant, OT mine site (2018) ;and
  - Khanbumbat permanent airport (2018).
- The installation of walkway lighting powered by solar energy on the way from the Oyut Camp to the Bagging Plant and the Northgate. Thirty-four sections of walkway lightings were installed in 2019 ;and
- The installation of runtime management equipment on air conditioners in various facilities. Over 7,000 units' runtime has been reduced which represents a decrease of 30% in energy use for these units.



## Cooperation Agreement with Local Communities.

Oyu Tolgoi has reached US\$10 billion in total in-country spend since 2010, marking the largest foreign investment in the country to date. The total in-country spend has substantially contributed to the country's economic development through taxes, fees, national and local procurement, salaries and other contributions provided to communities and the society over the past 10 years. 76 percent of the total spend has been with the purchase of goods and services from hundreds of Mongolian suppliers with Oyu Tolgoi working collaboratively with national and local suppliers to increase capability to ensure the highest international standards.

The company has also made a significant investment in people through not only employment but also the development of the workforce. Over 93 percent of Oyu Tolgoi's workforce are Mongolian nationals, who are professionals and young graduates from universities and colleges. Many employees have been given the opportunity to work at Rio Tinto operations in Australia, the United States, UK, Canada, and Singapore.

Oyu Tolgoi has had and continues to have a positive impact on the communities surrounding the mine, including partner communities (Khanbogd, Manlai, Bayan-Ovoo and Dalanzadgad soums), using formats such as the Cooperation Agreement signed in 2015 by the Umnugobi aimag, Khanbogd soum and Oyu Tolgoi LLC (the "Cooperation Agreement"). In Khanbogd, the partnership with Oyu Tolgoi LLC led to the connection of the town to a permanent power supply, funding for new educational and healthcare facilities, sealing of local roads, and programs to help improve social conditions. Construction of a new water supply system with capacity to support 13,000 residents was completed in 2016. Oyu Tolgoi LLC funded the construction of a 35.1 kilometres sealed road between Oyu Tolgoi and Khanbogd, which was commissioned in late 2018 and opened in early 2019. In 2019, Oyu Tolgoi LLC reached an agreement with local herders with regards to the complaint made to the Compliance Advisor and Ombudsman's Office. This agreement was made possible by the strong commitment of Oyu Tolgoi LLC's management as well as the extensive engagement by Oyu Tolgoi LLC's communities team with locals and international stakeholders to successfully implement a solution in compliance with agreed commitments.



In addition to the above achievements, under the Cooperation Agreement, Oyu Tolgoi LLC makes an annual contribution of US\$5 million to the Gobi Oyu Development Support Fund ("DSF"), an independent fund that supports sustainable community development. Since its creation in September 2015, the DSF has invested US\$22 million in 179 sustainable development projects and programs, which have resulted in the creation of more than 391 permanent jobs, benefits to over 390,000 community members, including scholarships for 187 students, among many other achievements.

"Ikh khurd" horse race, jockey medical check-up and protective equipment donation.

## Sustainability Commitments (Cont'd)

Examples of projects implemented through the DSF in 2019 include:

- The construction of a school and kindergartens to provide a convenient and comfortable learning and teaching environment to 640 students and 300 children;
- The construction of a health care centre in Mandal-Oyoo soum to provide easier access to health services;
- The construction of a new museum in Umnugobi aimag as well as the provision of required equipment;
- The co-funding of an integrated health care program to provide health related support to Umnugobi aimag women and youth;
- The co-funding of a three-year program to support small to mid-sized business through the establishment of a Business Innovation and Growth Centres;
- A heating plant in Manlai soum to provide heat to 2,400 residents;
- A Gobi grove in Manlai soum with 1,000 trees and a watering system over five hectares;
- A flood prevention dam in Khanbogd soum;
- Disinfection program assistance for 2.3 million livestock and over 5000 winter shelters across Umnugobi aimag;
- Three high output breeds of camels protection and creation of a local brand of cashmere ;and
- The protection of 42 historical sites along with local rangers education to ensure continuing protection and preservation of those sites.



Umnugobi museum which is under construction with Gobi Oyu DSF sponsorship.



## Sustainability Commitments (Cont'd)

### New hospital in Mandal-Ovoo soums of Umnugobi aimag

In 2019, Oyu Tolgoi backed Gobi Oyu Development Support Fund has commissioned and completed the Mandal-Ovoo Health Centre to provide quality and accessible medical care and services to 1700 people in the soum, plus seasonal tourists. This health centre is the second project funded by the DSF after Bayan-Ovoo soum Health centre built in 2016. The Centre has 12 beds and surgical rooms to conduct small scale surgical operations and equipped with standardized instruments and tools.

Mandal-Ovoo is located in the farthest northern part of Umnugobi aimag. The soum's old hospital was established in 1938.

In 2017, the State Specialized Inspection Agency concluded that the building cannot be used due to not meeting with hospital standards and accreditation criteria. Thus, it was required to build a new hospital in order to provide of quality health care services to communities in the soum.

Opening of new hospital  
with 10-bed capacity  
in Mandal-Ovoo soum.



## Sustainability Commitments (Cont'd)

### “Gobi Oyu-Student Scholarship” programme

Every year since its establishment in 2015, Oyu Tolgoi-funded Gobi Oyu Development Support Fund (DSF) provide its scholarship awards to young people in Umnugobi aimag. In 2019, within the scope of “Gobi Oyu-Student Scholarship” programme, being implemented for the fourth year in a row, the DSF Selection Committee awarded scholarships to 45 students studying at Mongolian universities, majoring in fields of study that are priorities in Umnugobi province.

The applicants must meet the following requirements: they are from Umnugobi province and studying in the fields of education, health, culture, agriculture, construction, and they are performing well academically. Out of 45 scholarship recipients being awarded for this year, 16 students are receiving the scholarship for the second year, eight for the third year, and one student for the fourth year.

Overall in 2015 – 2019, the DSF provided scholarships to 187 students from each soum of Umnugobi aimag. These students will become the qualified specialists who will in turn contribute themselves to the local development. As of the end of 2019, 54 students have graduated with 87% (47) becoming employed in various professional fields in Umnugobi aimag. The DSF also reserves five per cent of the annual OT investment budget of \$5m for the “Future Generation Special Fund” which provides development opportunities to the younger generation.



Youth Development Program rewarding ceremony.

Domestic scholarship rewarding ceremony.





## Environmental and Social Impact Assessment Management

In 2012 as part of project finance requirements, Oyu Tolgoi undertook a comprehensive Environmental and Social Impact Assessment (ESIA), which was performed independently. The process involved consultations with local and regional authorities, local businesses, community organizations and local community representatives.

The study provided an evaluation of both the direct and indirect impacts of Oyu Tolgoi's operations and project on the society, economy and environment in Mongolia. It described how Oyu Tolgoi expects to minimize and manage the mine's environmental and social impact as well as maximizing positive benefits over the mine's life. It also demonstrated a process to ensure local communities are consulted in decisions to be made throughout the life of Oyu Tolgoi's operation.

The first ESIA was published in 2013 showing a 91% compliance rate. A subsequent independent audit published in 2016 showed a 98% compliance rate. Based on these assessments, Turquoise Hill believes that Oyu Tolgoi has no areas of non-compliance.

Oyu Tolgoi Employees and Contractors planting tree at the Botanical garden of Ulaanbaatar.



## Board of Director

**Peter Gillin - Chairman**

Corporate Director

**Ulf Quellmann**

Chief Executive Officer

**Alan Chirgwin**

Vice President, Sales and Marketing,  
Copper & Diamonds  
Rio Tinto

**Stephen Jones**

Head of Technical Review  
Rio Tinto

**Russel Robertson**

Corporate Director

**Maryse Saint- Laurent**

Corporate Director

**George R. Burns**

President and Chief Executive Officer,  
Eldorado Gold  
(Effective January 21, 2020)

## Senior Leadership Team

**Ulf Quellmann**

Chief Executive Officer

**Luke Colton**

Chief Financial Officer

**Jo-Anne Dudley**

Chief Operating Officer

**Dustin S. Isaacs**

VP, General Counsel & Corporate Secretary

**Roy McDowall**

Head of Investor Relations & Corporate  
Communications







Management's Discussion and Analysis of Financial Condition  
and Results of Operations

December 31, 2019

**TURQUOISE HILL**

**Turquoise Hill Resources Ltd.**

Management's Discussion and Analysis of Financial Condition and Results of Operations  
(Stated in U.S. dollars, except where noted)

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**INTRODUCTION**

This management discussion and analysis of the financial condition and results of operations (MD&A) of Turquoise Hill Resources Ltd. should be read in conjunction with the audited consolidated financial statements of Turquoise Hill Resources Ltd. and the notes thereto for the year ended December 31, 2019. The financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). In this MD&A, unless the context otherwise dictates, a reference to the "Company", "we" or "our" refers to Turquoise Hill Resources Ltd. and a reference to "Turquoise Hill" refers to Turquoise Hill Resources Ltd. together with its subsidiaries. Additional information about the Company, including its Annual Information Form (AIF), is available under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

References to "C\$" refer to Canadian dollars and "\$" to United States dollars.

The MD&A refers to the All Injury Frequency Rate (AIFR), which is an indicator of workplace health and safety and provides insight into an organization's efforts to protect its workforce from work-related hazards. Oyu Tolgoi's AIFR is based on 200,000 hours of work exposure.

This MD&A contains certain forward-looking statements and certain forward-looking information. Please refer to the cautionary language commencing on page 44.

**All readers of this MD&A are advised to review and consider the risk factors discussed under the heading "Risk and Uncertainties" in this MD&A commencing on page 24.**

The effective date of this MD&A is March 20, 2019.



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## **FINANCIAL AND OPERATIONAL HIGHLIGHTS FOR 2019**

### **Full Year 2019**

- Safety is a top priority and is critical to our continued success. The Oyu Tolgoi mine achieved another strong AIFR of 0.16 per 200,000 hours worked for the year ended December 31, 2019. AIFR steadily declined since 2013, dropping 64% from 2013 through 2019.
- Full year copper production of 146,346 tonnes vs original guidance range of 125,000 – 155,000 tonnes.
- Full year gold production of 241,840 ounces vs original guidance range of 180,000 – 220,000 ounces.
- Full year mill throughput of 40,777,225 tonnes, an increase of 5% over 2018.
- Revenue of \$1.2 billion in 2019 decreased 1.2% over 2018, impacted by lower copper production partly offset by higher gold revenue driven by a higher average annual gold price in 2019.
- Cash used in operating activities before interest and taxes was \$341.7 million, a decrease from \$363.0 million generated in 2018, primarily reflecting the impact of reduced revenue.
- For 2019, Oyu Tolgoi's cost of sales was \$2.25 per pound of copper sold (2018: \$2.25), C1 cash costs<sup>1</sup> were \$1.37 per pound of copper produced (2018: \$1.59) and all-in sustaining costs<sup>1</sup> were \$2.08 per pound of copper produced (2018: \$2.20).
- Total operating cash costs<sup>1</sup> of \$774.5 million for 2019 came in under the Company's revised guidance and decreased 5.2% over 2018. This decrease was due to lower freight and royalty costs driven by lower volumes of concentrate sold and lower sales revenue respectively, and lower milling costs due to lower maintenance costs. These were partly offset by higher power study costs in 2019 compared to 2018.
- Underground expansion capital for 2019 was \$1.2 billion, meeting the upper-end of the Company's revised guidance.
- At the end of December 2019, Turquoise Hill had approximately \$2.2 billion of available liquidity, split between remaining project finance proceeds of \$0.5 billion and \$1.7 billion of cash and cash equivalents. We currently expect to have enough liquidity to fund our operations and underground development into Q2 2021.
- Shaft 2 construction was completed in October 2019, and was fully commissioned in February 2020. The service hoist allows for the movement of 300 people per cage cycle, adding to the maximum of 60 people per cage cycle through Shaft 1, while the production hoist has the ability to lift 35,000 tonnes of material to surface daily.
- Construction is progressing on Shafts 3 and 4 with both collars now installed. Final preparations are now underway to enable commencement of main sinking operations for both shafts during the second quarter of 2020.
- Since the restart of underground development in June 2016, 32.9 total equivalent kilometres and 155.3 cubic kilometres of mass excavation has been completed. Mining of the primary crusher 1 excavation which is over 30,000 cubic metres in volume was completed in June 2019 and handed over for civil construction work to commence.

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<sup>1</sup> Please refer to Section – NON-GAAP MEASURES – on page 40 of this MD&A for further information.

**Turquoise Hill Resources Ltd.**

Management's Discussion and Analysis of Financial Condition and Results of Operations  
(Stated in U.S. dollars, except where noted)

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- Detailed analysis work on the final mine design is still anticipated to be completed during the first half of 2020, and the Definitive Estimate, which will include the estimate of cost and schedule for the underground project based on the updated design of Panel 0, is still expected to be delivered in the second half of 2020.
- In May 2019, the Parliamentary Working Group (PWG) concluded and submitted its report to the Economic Standing Committee. From the report, a Resolution was put forward by the PWG and passed unanimously in a plenary session of the Parliament of Mongolia on November 21, 2019 and published on December 6, 2019.
- The Tavan Tolgoi Power Plant (TTPP) Feasibility Study was submitted to the Government of Mongolia on February 17, 2020 by Oyu Tolgoi LLC. The study is based on a 300 MW coal fired power plant to be located at the Tavan Tolgoi coal fields approximately 150 kilometres from Oyu Tolgoi.
- In February 2020, the Company announced that Oyu Tolgoi LLC has been unable to reach a resolution of its dispute with the Mongolian Tax Authority with respect to its tax assessment, and will be proceeding with the initiation of a formal international arbitration proceeding in accordance with the dispute resolution provisions of the Investment Agreement and the Underground Plan.
- In March 2020, the Company announced that following the first positive test for COVID-19 in Mongolia, the Government of Mongolia increased its restrictions on flights in and out of the country and on the movement of goods and people within and across its borders. The Company announced there would be a slowdown on the underground project, the full impact of which is unknown at this time. The Company will update the market once more information is available.

**Fourth quarter 2019**

- Copper production in Q4'19 of 32,906 tonnes was lower compared to Q4'18 due to decreased head grade driven by the transition from Phases 4A and 6A, to Phase 4B, Phase 6B and lower grade stockpiles. As anticipated gold production in Q4'19 of 24,344 ounces was significantly lower compared to Q4'18 due to the planned transition from Phase 4A to the lower grade sources of Phase 4B and stockpiles.
- In Q4'19, mill throughput was higher than the same quarter of 2018 due to overall feed hardness being lower as a result of increased Phase 4B ore and Phase 6B ore, as well as lower grade stockpiles material feed in blending. Mill availability and equipment utilization were higher in Q4'19 than the same period of 2018.
- Shaft 2 construction was completed in October 2019 and the fully certified state commissioning certificate for Shaft 2 being received on February 19, 2020.
- Work advanced at Shaft 4 with the sinking stage installed into the shaft barrel and headframe modules installed. Work on the commissioning of the headframe and winder buildings is well advanced ahead of the commencement of sinking in the second quarter of 2020. At Shaft 3, we completed the construction of the sinking gantry and it was placed into the shaft during the first week of January 2020. Headframe module placement has commenced.
- A decision was made in Q4 to retain a mid-access drive only on the apex level of the mine design of Panel 0 (P0). This is one of a number of integral decision points in narrowing options to complete the final P0 mine design, however it is too early to accurately determine the potential impact on the overall cost or schedule. Recent work, including the mid-access drive decision, indicates that the schedule delay is within the 16 to 30 months range but is trending away from the lower end.
- Productivity improvements resulted in increased underground lateral development rates during the fourth quarter, with an average rate of 1,607 equivalent metres (eqm) per month compared to 1,214 eqm in the third quarter, with December seeing a record 1,809 eqm.



**Turquoise Hill Resources Ltd.**

Management's Discussion and Analysis of Financial Condition and Results of Operations  
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- Revenue of \$221.4 million in Q4'19 decreased 36.0% from \$346.2 million in Q4'18, primarily due to both a 79.2% decrease in gold production and a 20.7% decrease in copper production, reflecting the transition from mining Phase 4A to lower grade Phase 4B and stockpiles.
- Cash used in operating activities before interest and taxes was \$42.4 million, a decrease from \$146.1 million generated in Q4'18, primarily reflecting the impact of reduced revenue.
- Cost of sales was \$2.46 per pound of copper sold, C1 cash costs<sup>2</sup> were \$2.21 per pound of copper produced, and all-in sustaining costs<sup>2</sup> were \$2.97 per pound of copper produced.
- Total operating cash costs<sup>2</sup> of \$194.6 million in Q4'19 decreased 19.7% from \$242.3 million in Q4'18. This was principally due to lower milling and mining costs due to lower maintenance costs and lower royalty costs due to lower sales revenue.
- During Q4'19 underground development spend was \$289.7 million, resulting in total project spend since January 1, 2016 of approximately \$3.5 billion.

**OPERATIONAL OUTLOOK FOR 2020**

Oyu Tolgoi is expected to produce 140,000 to 170,000 tonnes of copper and 120,000 to 150,000 ounces of gold in concentrates in 2020 from both the open pit and the beginning of the underground development material being processed. Although the mid-point copper production range guidance is higher in 2020 versus the 2019 guidance, a lower gold production year is expected for 2020. This is due to the need to mine through lower grade material on the periphery of the South West pit as Phase 4B sinks towards the highest gold and copper grades in the bottom of the pit. It is anticipated that the higher grade ore will be accessed in 2021, resulting in a significant increase in gold production in 2021. Mill throughput for 2020 is expected to be approximately 40 million tonnes.

Operating cash costs<sup>2</sup> for 2020 are expected to be \$800 million to \$850 million.

Capital expenditure for 2020 on a cash-basis is expected to be approximately \$80 million to \$120 million for open-pit operations and \$1.2 billion to \$1.3 billion for the underground development exclusive of any expenditure on power.

Open-pit capital is mainly comprised of deferred stripping, equipment purchases, tailings storage facility construction and maintenance componentization. Underground development capital includes both expansion capital and VAT.

C1 cash costs<sup>2</sup> are expected to be in the range of \$1.80 to \$2.20 per pound of copper produced, up from 2019 guidance largely reflecting the reduced gold production estimate. Unit cost guidance assumes the midpoint of expected 2020 copper and gold production ranges and commodity assumptions of \$2.71 per pound copper and \$1,362 per ounce gold.

**2021 OUTLOOK**

Production in 2021 is expected to increase to a range of 170,000 to 200,000 tonnes of copper, and 450,000 to 500,000 ounces of gold, as we transition to the higher grade ore in the lower benches of the pit and continue to increase the amount of underground development material processed.

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<sup>2</sup> Please refer to Section – NON-GAAP MEASURES – on page 40 of this MD&A for further information.

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**OUR BUSINESS**

Turquoise Hill is an international mining company focused on the operation and continued development of the Oyu Tolgoi copper-gold mine in Mongolia, which is the Company's principal and only material mineral resource property. The Company's ownership of the Oyu Tolgoi mine is held through a 66% interest in Oyu Tolgoi LLC (Oyu Tolgoi); the remaining 34% interest is held by Erdenes Oyu Tolgoi LLC (Erdenes), a Mongolian state-owned entity.

The Oyu Tolgoi mine is located approximately 550 kilometres south of Ulaanbaatar, Mongolia's capital city, and 80 kilometres north of the Mongolia-China border. Mineralization on the property consists of porphyry-style copper, gold, silver and molybdenum contained in a linear structural trend (the Oyu Tolgoi Trend) of deposits distributed over a 12 kilometres interval of a 25 kilometres corridor of mineralization. The first of those (the Oyut deposit) was put into production as an open-pit operation in 2013. A second deposit, Hugo North (Lift One), is under development as an underground operation.

The copper concentrator plant, with related facilities and necessary infrastructure, was originally designed to process approximately 100,000 tonnes of ore per day from the Oyut open pit. However, since 2014, the concentrator has improved operating practices and gained experience, which has helped achieve a consistent throughput of over 105,000 tonnes per day. Concentrator throughput for 2020 is targeted at over 110,000 tonnes per day and expected to be approximately 40 million tonnes for the year due to improvements in concentrator performance and ore characteristics.

At the end of Q4'19, Oyu Tolgoi had a total workforce (employees and contractors), including underground project construction, of approximately 13,800, of which 93% were Mongolians.

**SELECTED ANNUAL FINANCIAL INFORMATION**

(\$ in millions, except per share information)

	Year Ended December 31		
	2019	2018	2017
Revenue	\$ 1,166.0	\$ 1,180.0	\$ 939.8
Income (loss) for the year	\$ (476.9)	\$ 394.3	\$ 110.9
Net income (loss) attributable to owners of Turquoise Hill	\$ (150.5)	\$ 411.2	\$ 181.2
Basic and diluted income (loss) per share attributable to owners of Turquoise Hill	\$ (0.07)	\$ 0.20	\$ 0.09
Total assets	\$ 12,822.4	\$ 13,312.0	\$ 12,833.3
Long-term liabilities			
Borrowings and other financial liabilities	\$ 4,187.3	\$ 4,187.3	\$ 4,159.1
Decommissioning obligations	\$ 104.2	\$ 131.6	\$ 125.7
Deferred income tax liabilities	\$ 79.2	\$ 47.9	\$ 25.8

Note: Annual financial information has been extracted from the audited financial statements of Turquoise Hill, which are prepared in accordance with IFRS.

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**SELECTED FINANCIAL METRICS <sup>(1)</sup>**

	4Q	4Q	Change	12 months	12 months	Change
	2019	2018		2019	2018	
Revenue	221.4	346.2	-36.0%	1,166.0	1,180.0	-1.2%
Income (loss) for the period	109.5	95.0	--	(476.9)	394.3	--
Income (loss) attributable to owners of Turquoise Hill	113.1	101.0	--	(150.5)	411.2	--
Basic and diluted income (loss) per share attributable to owners of Turquoise Hill	0.06	0.05	--	-0.07	0.20	--
Revenue by metals in concentrates						
Copper	178.1	210.3	-15.3%	787.8	866.5	-9.1%
Gold	40.1	132.7	-69.8%	365.0	300.4	21.5%
Silver	3.2	3.0	6.7%	13.2	13.1	0.8%
Cost of sales	175.0	187.7	-6.8%	743.0	777.2	-4.4%
Production and delivery costs	125.2	143.3	-12.6%	559.1	568.0	-1.6%
Depreciation and depletion	49.8	44.6	11.7%	183.9	209.5	-12.2%
Capital expenditure on cash basis	318.6	371.8	-14.3%	1,308.1	1,304.3	0.3%
Underground	289.7	347.3	-16.6%	1,174.9	1,213.8	-3.2%
Open pit <sup>(2)</sup>	28.9	24.5	18.0%	133.2	90.5	47.2%
Royalties	12.5	20.1	-37.8%	64.0	70.8	-9.6%
Operating cash costs <sup>(3)</sup>	194.6	242.3	-19.7%	774.5	817.0	-5.2%
Unit costs (\$)						
Cost of sales (per pound of copper sold)	2.46	2.12	16.0%	2.25	2.25	0.0%
C1 (per pound of copper produced) <sup>(3)</sup>	2.21	1.24	78.2%	1.37	1.59	-13.8%
All-in sustaining (per pound of copper produced) <sup>(3)</sup>	2.97	2.01	47.8%	2.08	2.20	-5.5%
Mining costs (per tonne of material mined) <sup>(3)</sup>	1.55	2.28	-31.9%	1.88	2.13	-11.7%
Milling costs (per tonne of ore treated) <sup>(3)</sup>	5.01	6.82	-26.6%	6.48	7.11	-8.9%
G&A costs (per tonne of ore treated)	3.49	4.55	-23.2%	3.30	3.03	9.1%
Cash generated from (used in) operating activities	(153.6)	36.0	-526.7%	(11.7)	180.0	-106.5%
Cash generated from operating activities before interest and tax	42.4	146.1	-71.0%	341.7	363.0	-5.9%
Interest paid	206.6	130.5	58.3%	427.5	261.4	63.5%
Total assets	12,822	13,312	-3.7%	12,822	13,312	-3.7%
Total non-current financial liabilities	4,371	4,367	0.1%	4,371	4,367	0.1%

<sup>(1)</sup> Any financial information in this MD&A should be reviewed in conjunction with the Company's consolidated financial statements or condensed interim consolidated financial statements for the reporting periods indicated.

<sup>(2)</sup> Open-pit capital expenditure includes both sustaining and non-underground development activities.

<sup>(3)</sup> Please refer to NON-GAAP MEASURES – on page 40 of this MD&A for further information.

**2019 versus 2018**

- Revenue of \$1,166.0 million in 2019 decreased 1.2% compared to \$1,180.0 million in 2018, primarily due to the 9.1% decrease in copper revenue, driven by the 8% decrease in copper production, reflecting the transition from mining Phase 4A to lower grade Phase 4B and stockpiles. This was partly offset by higher gold revenue driven by a 9.9% increase in average annual gold price from 2018 to 2019.
- Loss for 2019 was \$476.9 million compared with income of \$394.3 million in 2018. This \$0.9 billion differential was primarily due to the \$0.6 billion impairment charge recorded in Q2'19 together with \$0.3 billion of additional deferred tax assets that were recognized in 2018 compared to 2019. Both items were impacted by the Company's update on the Oyu Tolgoi underground project on July 15, 2019, wherein the Company disclosed a projected increase in underground development capital ranging between \$1.2 billion and \$1.9 billion over the \$5.3 billion previously disclosed in addition to a range of possible further delays to sustainable first production (now expected between May 2022 and June 2023). Recent work, including the mid-access drive decision, indicates that the schedule delay is within the 16 to 30 months range but is trending away from the lower end.



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- Cost of sales in 2019 was \$743.0 million compared to \$777.2 million in 2018, reflecting a 2.9% decrease in the volumes of concentrates sold together with the impact of reduced depreciation and depletion due to certain long-lived assets reaching the end of their depreciable lives during 2018. This was partly offset by a higher unit cost of production due to lower head grades and recoveries.
- Capital expenditure on a cash basis for 2019 was \$1,308.1 million compared to \$1,304.3 million in 2018, comprising amounts attributed to the underground project and open-pit activities of \$1,174.9 million and \$133.2 million, respectively. Open-pit capital expenditure includes deferred stripping of \$48.0 million and tailings storage facility spending of \$24.9 million.
- Total operating cash costs<sup>3</sup> of \$774.5 million for 2019 decreased 5.2% over 2018 due to lower freight and royalty costs driven by lower volumes of concentrate sold and lower sales revenue respectively, and lower milling costs due to lower maintenance costs. These were partly offset by higher power study costs in 2019 compared to 2018.
- Cost of sales were \$2.25 per pound of copper sold in 2019, consistent with \$2.25 per pound of copper sold in 2018 reflecting lower volumes of metals in concentrate sold offset by higher unit cost of production due to lower head grades and recoveries.
- Oyu Tolgoi's C1 cash costs<sup>3</sup> in 2019 were \$1.37 per pound of copper produced, a decrease from \$1.59 per pound of copper produced in 2018, and are presented net of revenues from gold and silver sales. The decrease was mainly due to higher gold and silver credits driven by the 21.5% increase in gold sales revenue from 2018. This also led to the 2019 C1 cash costs<sup>3</sup> of \$1.37 per pound of copper produced coming in under the previous guidance range of \$1.50 to \$1.70 per pound of copper produced.
- All-in sustaining costs<sup>3</sup> in 2019 were \$2.08 per pound of copper produced, compared with \$2.20 per pound of copper produced in 2018. The decrease was impacted by the same factors that led to the lower C1 cash costs. This was partly offset by higher major parts costs and higher other sustaining open pit capital resulting mainly from capitalized deferred stripping in 2019 driven by an increase in the proportion of waste removed.
- Mining costs<sup>3</sup> in 2019 were \$1.88 per tonne of material mined compared with \$2.13 per tonne of material mined in 2018. The decrease was mainly due to increased material mined as well as lower maintenance costs and fuel costs.
- Milling costs<sup>3</sup> in 2019 were \$6.48 per tonne of ore treated compared with \$7.11 per tonne of ore treated in 2018. The decrease was mainly due to increased milled ore, lower maintenance cost due to savings in major shutdown and lower consumables costs due to lower power costs.
- G&A costs in 2019 were \$3.30 per tonne of ore treated compared with \$3.03 per tonne of ore treated in 2018. The increase was due to increased power plant study costs.
- Cash used in operating activities of \$11.7 million decreased from cash generated of \$180.0 million in 2018. This was principally due to \$166.0 additional interest paid in 2019 compared to 2018 resulting mainly from the difference in timing of payment of the completion support fee to Rio Tinto. In addition, the decrease was impacted by lower sales revenue and negative movements in working capital.

**Q4'19 vs Q4'18**

- Revenue of \$221.4 million decreased 36.0% from \$346.2 million primarily due to a 79.2% decrease in gold production and the 20.7% decrease in copper production. The decreased production and a 3.9% decrease in copper price was partly offset by a 17.1% increase in the average gold price in the period.
- Income for the period was \$109.5 million compared with income of \$95.0 million in Q4'18. This was primarily due to \$112.0 million higher deferred tax assets recognized in Q4'19 compared to Q4'18 partly offset by

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<sup>3</sup> Please refer to Section – NON-GAAP MEASURES – on page 40 of this MD&A for further information.

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lower gross margin driven by the reduced revenue. Income attributable to owners of Turquoise Hill in Q4'19 was \$113.1 million or \$0.06 per share, compared with income of \$101.0 million or \$0.05 per share in Q4'18.

- Cost of sales of \$175.0 million decreased 6.8% from \$187.7 million in Q4'18 reflecting 17.7% lower volumes of concentrates sold partly offset by the impact of increased unit cost of sales per pound of copper sold due to decreased head grades.
- Unit cost of sales of \$2.46 per pound of copper sold increased 16.0% from \$2.12 reflecting lower average mill head grades and recoveries impacted by transitioning to the lower grade Phase 4B ore.
- Capital expenditure on a cash basis of \$318.6 million compared to \$371.8 million in Q4'18, comprised of \$289.7 million attributed to the underground project and \$28.9 million to open-pit activities.
- Total operating cash costs<sup>4</sup> of \$194.6 million in Q4'19 decreased 19.7% from \$242.3 million in Q4'18. This was principally due to lower milling and mining costs due to lower maintenance costs and lower royalty costs due to lower sales revenue.
- Oyu Tolgoi's C1 cash costs<sup>4</sup> of \$2.21 per pound of copper produced increased from \$1.24 primarily reflecting the impact of the 69.8% lower gold sales revenue credits in Q4'19 compared to Q4'18.
- All-in sustaining costs<sup>4</sup> of \$2.97 increased 47.8% from \$2.01 in Q4'18. Similar to the C1 cash costs, the increase was primarily due to a reduction in gold revenue credits, partly offset by lower royalty costs resulting from the lower sales revenue in Q4'19 compared to Q4'18.
- Mining costs<sup>4</sup> of \$1.55 per tonne of material mined decreased 31.9% from \$2.28 per tonne of material mined in Q4'18. The decrease was due to higher material mined resulting in lower cycle time and lower fuel costs as a result of mining in higher benches.
- Milling costs<sup>4</sup> of \$5.01 per tonne of ore treated decreased 26.6% from \$6.82 of ore treated in Q4'18 mainly due to lower maintenance service costs and cost savings in major plant shutdowns.
- G&A costs per tonne of ore treated of \$3.49 per tonne of ore treated decreased 23.2% from \$4.55 per tonne of ore treated due to lower administrative expenses partly offset by increased power study costs.
- Cash used in operating activities of \$153.6 million decreased from cash generated of \$36.0 million in Q4'18. This was principally due to \$76.1 million higher interest paid in 2019 compared to 2018 resulting mainly from the difference in timing of payment of the completion support fee to Rio Tinto. In addition, the decrease was impacted by the 36.0% decrease in sales revenue.

## OYU TOLGOI

### Safety performance

Underground development by its nature increases specific levels of safety risk and reinforces why safety is Oyu Tolgoi's main priority. The mine's management is committed to reducing risk and injury. Overall, in 2019 Oyu Tolgoi achieved an industry leading AIFR of 0.16 per 200,000 hours worked against a target of 0.21. Oyu Tolgoi Operations ended the year of 2019 with AIFR of 0.09 against target of 0.15, which represents the best safety performance to date. Oyu Tolgoi Underground ended the year of 2019 with AIFR of 0.21 against a target of 0.26. In addition, there are other safety metrics that are common in the mining industry, utilized by Oyu Tolgoi to continuously monitor safety performance.

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<sup>4</sup> Please refer to Section – NON-GAAP MEASURES – on page 40 of this MD&A for further information.

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**COVID-19 Response**

The Company is closely monitoring the impact of the COVID-19 virus on its business and operations. The Oyu Tolgoi Business Resilience Team is meeting on a daily basis and taking a considered and risk-based approach to managing our response and actions for the prevention of COVID-19. As part of a range of broader measures, we have temperature and health screenings in place, and a dedicated hotline for employees who are on or off site to call in for advice or information sharing. To assist with the battle against COVID-19, Oyu Tolgoi LLC has donated MNT100 million to the Government of Mongolia, and through the Oyu Tolgoi-sponsored Gobi Oyu Development Support Fund, we further committed MNT200 million to the Umnugobi emergency committee, and MNT10 million to the Khanbogd Emergency Commission for prevention support. We are also sharing our prevention and hygiene controls we have in place with local companies as they prepare to resume their operations and border crossings.

**Key operational metrics for 2019 and Q4'19 are as follows:****Oyu Tolgoi Production Data**

*All data represents full production and sales on a 100% basis*

	4Q 2019	4Q 2018	Change	Full Year 2019	Full Year 2018	Change
Open pit material mined ('000 tonnes)	<b>28,122</b>	22,863	23.0%	<b>101,316</b>	91,310	11.0%
Ore treated ('000 tonnes)	<b>11,088</b>	9,361	18.4%	<b>40,777</b>	38,738	5.3%
Average mill head grades:						
Copper (%)	<b>0.42</b>	0.55	-23.6%	<b>0.45</b>	0.51	-11.8%
Gold (g/t)	<b>0.15</b>	0.56	-73.2%	<b>0.29</b>	0.36	-19.4%
Silver (g/t)	<b>1.06</b>	1.22	-13.1%	<b>1.13</b>	1.22	-7.4%
Concentrates produced ('000 tonnes)	<b>152.6</b>	189	-19.3%	<b>674.6</b>	724.9	-6.9%
Average concentrate grade (% Cu)	<b>21.6</b>	21.9	-1.4%	<b>21.7</b>	21.9	-0.9%
Production of metals in concentrates:						
Copper ('000 tonnes)	<b>32.9</b>	41.5	-20.7%	<b>146.3</b>	159.1	-8.0%
Gold ('000 ounces)	<b>24.3</b>	117	-79.2%	<b>241.8</b>	285	-15.2%
Silver ('000 ounces)	<b>190</b>	238	-20.2%	<b>866.6</b>	914	-5.2%
Concentrate sold ('000 tonnes)	<b>157.5</b>	191.4	-17.7%	<b>724.7</b>	746.4	-2.9%
Sales of metals in concentrates:						
Copper ('000 tonnes)	<b>32.3</b>	40.2	-19.7%	<b>149.9</b>	156.7	-4.3%
Gold ('000 ounces)	<b>24.7</b>	111	-77.7%	<b>273.6</b>	248	10.3%
Silver ('000 ounces)	<b>243.6</b>	216	12.8%	<b>895.9</b>	873	2.6%
Metal recovery (%)						
Copper	<b>74.2</b>	84.8	-12.5%	<b>78.7</b>	81.4	-3.3%
Gold	<b>48.2</b>	71.7	-32.8%	<b>63.6</b>	65.2	-2.5%
Silver	<b>53.5</b>	67.1	-20.3%	<b>58.1</b>	60.9	-4.6%

**Underground development**

As previously announced on July 15, 2019, improved information with respect to rock mass and geotechnical data modelling has confirmed that there are stability risks associated with components of the Feasibility Study 2016 mine design.



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To address these risks, a number of refinements are under review to determine the final mine design, and the first of the key decisions that has been made is to retain a mid-access drive only on the apex level of the mine design of Panel 0. A mid-access drive is essentially a horizontal tunnel that cuts transversely across the mine footprint and allows development both to the north and south within the orebody and accelerates the time to first sustainable production.

Current estimates indicate that sustainable first production could be delayed by 16 to 30 months compared with the Q1'21 estimate in the original feasibility study guidance in 2016, and the development capital spend for the project may increase by \$1.2 billion to \$1.9 billion over the \$5.3 billion previously disclosed. The range of project durations under consideration influence the differences in capital costs estimated to complete the project and the increase includes Shaft 2 delay related costs. These ranges incorporate a range of productivity assumptions. A new program of work is underway to optimize performance, while technical reviews are ongoing to guide the final inputs into an updated detailed cost estimate for the Hugo North Lift 1 development. Recent work, including the mid-access drive decision, indicates that the schedule delay is within the 16 to 30 months range but is trending away from the lower end.

Decisions regarding the sequencing of the first panel of mining, Panel 0, productivity inputs and ore pass locations continue and are expected to be completed by the first half of 2020. These will take into consideration the consequential impacts on cost, schedule and other key variables such as Mineral Reserves, project ramp-up profile and peak production together with improvements in productivity. The resulting Pre-Feasibility Study designs are being detailed to Feasibility Study standard, then scheduled and costed to form the Definitive Estimate are due in the second half of 2020. In the interim, underground development continues and we look forward to providing the market with any updates to the schedule and development capital spend.

Shaft 2 has now been successfully commissioned and the operational passport documentation has been accepted by General Agency for Specialized Inspection (GASI) as complete. First full load and full speed testing of the Production Hoist has been witnessed by GASI, and the full system has been operated to move material from the Shaft 2 jaw crusher to the surface. The first large-scale personnel movements using the Shaft 2 service cage commenced during the fourth quarter.

On December 13, 2019, the Mongolian Minister of Mining and Heavy Industry and company executives attended a celebration for the opening of Shaft 2 on site. A full trial of the Shaft 2 Production Hoist system to the Coarse Ore Stockpile was completed in December and successfully delivered approximately 20,000 tonnes of ore to the concentrator.

Shaft 2 is a 10-metre diameter shaft sunk to approximately 1.3 kilometres below the surface. The shaft uses the world's largest production hoist motor able to lift 60 tonnes and can carry 300 people in the service hoist. When operating at maximum capacity, the production hoist has the ability to lift 35,000 tonnes of material to the surface daily.

The Load out conveyor and Shaft 2 integrated materials handling system is fully commissioned. The Shaft 2 production and logistics capability is a key enabler of increased underground development and construction of critical underground infrastructure such as the Primary Crusher 1 and the material handling systems that support the start of production ramp-up.

Primary Crusher 1 civil works are ongoing, and the team has successfully poured the sixth level crusher wall and installed steel for preparation of pour seven. The Surge Bin chute and Spile Bar chute were both installed. Additional resources have been mobilised to assist with contractor management and training.

Work advanced at Shaft 4 with the sinking stage installed into the shaft barrel and headframe modules installed. Work on the commissioning of the headframe and winder buildings is well advanced ahead of the commencement of sinking in the second quarter of 2020. At Shaft 3, we completed the construction of the sinking gantry and it was placed into the shaft during the first week of January 2020. Headframe module placement has commenced.

Underground development in Q4'19 has accelerated. Focus on productivity gains on the most critical development areas over the past five months has reaped substantial improvements. Underground development

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progressed 4.8 total equivalent kilometres and completed 9 cubic kilometres of mass excavation during the quarter. Since the restart of underground development, 32.9 total equivalent kilometres and 155.3 cubic kilometres of mass excavation have been completed. The following table provides a breakdown of the various components of completed development (excluding conveyor declines) since project restart:

<b>Oyu Tolgoi Underground Project Development Progress Excluding Conveyor Declines</b>			
<b>Year</b>	<b>Total Equivalent Development (Km)</b>	<b>Lateral Development (Km)</b>	<b>Mass Excavation ('000' m<sup>3</sup>)</b>
<b>2016</b>	<b>1.6</b>	<b>1.5</b>	<b>3.0</b>
Q1'17	1.0	0.8	5.2
Q2'17	1.4	0.9	9.2
Q3'17	1.4	1.2	8.3
Q4'17	2.2	1.9	8.9
<b>2017</b>	<b>6.1</b>	<b>4.8</b>	<b>31.6</b>
Q1'18	2.6	2.1	11.6
Q2'18	2.4	2.1	8.6
Q3'18	3.0	2.1*	23.3*
Q4'18	2.3	1.6	16.0
<b>2018</b>	<b>10.3</b>	<b>7.9</b>	<b>59.5</b>
Q1'19	3.2	2.3	21.4
Q2'19	3.2	2.4	19.3
Q3'19	3.6	3.2	11.4
Q4'19	4.8	4.5	9.0
<b>2019</b>	<b>14.9</b>	<b>12.4</b>	<b>61.1</b>
<b>Total</b>	<b>32.9</b>	<b>26.7</b>	<b>155.3</b>

Notes:

Totals may not match due to rounding.

\* Lateral development and mass excavation amount for Q3'18 have been updated to reflect revised results.

<b>Oyu Tolgoi Conveyor Decline Project Development Progress</b>			
<b>Year</b>	<b>Total Equivalent Development (Km)</b>	<b>Lateral Development (Km)</b>	<b>Mass Excavation ('000' m<sup>3</sup>)</b>
<b>2016</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Q1'17	0.1	0.1	0.0
Q2'17	0.4	0.4	0.2
Q3'17	0.9	0.9	0.5
Q4'17	0.9	0.8	0.5
<b>2017</b>	<b>2.3</b>	<b>2.3</b>	<b>1.2</b>
Q1'18	0.8	0.8	0.1
Q2'18	0.8	0.8	0.1
Q3'18	0.8	0.8	0.3
Q4'18	0.6	0.6	0.1
<b>2018</b>	<b>3.0</b>	<b>3.0</b>	<b>0.6</b>
Q1'19	0.8	0.8	0.8
Q2'19	0.9	0.9	0.8
Q3'19	0.9	0.7	4.9
Q4'19	1.1	0.7	8.3
<b>2019</b>	<b>3.7</b>	<b>3.1</b>	<b>14.7</b>
<b>Total</b>	<b>9.0</b>	<b>8.3</b>	<b>16.5</b>

Note: Totals may not match due to rounding.

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Oyu Tolgoi spent \$289.7 million on underground development during Q4'19. Total underground project spend from January 1, 2016 to December 31, 2019 was approximately \$3.5 billion. Underground project spend on a cash basis includes expansion capital, VAT and capitalized management services payment and excludes capitalized interest. In addition, Oyu Tolgoi had further capital commitments<sup>5</sup> of \$0.8 billion as of December 31, 2019. Since the restart of project development, Oyu Tolgoi has committed over \$3.0 billion to Mongolian vendors and contractors.

**FUNDING OF OYU TOLGOI LLC BY TURQUOISE HILL**

In accordance with the Amended and Restated Shareholders' Agreement dated June 8, 2011 (ARSHA), Turquoise Hill has funded Oyu Tolgoi LLC's cash requirements beyond internally generated cash flows by a combination of equity investment and shareholder debt.

For amounts funded by debt, Oyu Tolgoi LLC must repay such amounts, including accrued interest, before it can pay common share dividends. As of December 31, 2019, the aggregate outstanding balance of shareholder loans extended by subsidiaries of the Company to Oyu Tolgoi LLC was \$6.2 billion, including accrued interest of \$1.2 billion. These loans bear interest at an effective annual rate of LIBOR plus 6.5%.

In accordance with the ARSHA, a subsidiary of the Company has funded the common share investments in Oyu Tolgoi LLC on behalf of state-owned Erdenes. These funded amounts earn interest at an effective annual rate of LIBOR plus 6.5% and are repayable, by Erdenes to a subsidiary of the Company, via a pledge over Erdenes' share of Oyu Tolgoi LLC common share dividends. Erdenes also has the right to reduce the outstanding balance by making cash payments at any time. As of December 31, 2019, the cumulative amount of such funding was \$1.2 billion, representing 34% of invested common share equity, with unrecognized interest on the funding amounting to \$0.7 billion.

At the end of December 2019, Turquoise Hill has approximately \$2.2 billion of available liquidity, split between remaining project finance proceeds of \$0.5 billion, which are drawn and currently deposited with Rio Tinto, and \$1.7 billion of cash and cash equivalents. In addition, we expect to generate free cash flow at our existing open pit operations, which will also be available to help fund the underground development.

Turquoise Hill currently expects to have enough liquidity to fund its operations and underground development, including progression of the proposed Tavan Tolgoi-based power plant, into Q2 2021. Taking into consideration the estimated impacts of the announced increases to underground development capital, as well as delays to first sustainable production, the Company expects to need significant incremental financing to sustain its underground development as well as construction of the proposed Tavan Tolgoi-based power plant beyond this timeframe. The Company will have greater clarity on this incremental funding requirement as the Definitive Estimate progresses and as discussions progress with the Government of Mongolia to conclude a mutually acceptable basis on which to proceed with securing long-term domestic power supply for Oyu Tolgoi; nevertheless, current estimates indicate an incremental funding requirement, over and above the \$2.2 billion in liquidity currently available, of at least \$4.5 billion.

Turquoise Hill and Oyu Tolgoi LLC have the option to raise additional external financing, subject to required approvals, to assist in funding development going forward, including during underground commissioning and ramp up. This additional external funding, as well as any possible re-profiling of the principal repayments relating to the existing project financing facility, have not been assumed in estimating the incremental funding requirement. Further, important variables impacting the estimated incremental funding requirement include:

- The amount of incremental underground development capital required;
- Whether a Tavan Tolgoi-based power plant is ultimately selected as the long-term domestic power solution for Oyu Tolgoi;

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<sup>5</sup> Please refer to Section – NON-GAAP MEASURES – on page 40 of this MD&A for further information.



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- The timing of sustainable first production and its resulting cash flows. Recent work, including the mid-access drive decision, indicates that the schedule delay range is within the 16 to 30 months previously disclosed but is trending away from the lower end of this range;
- The timing of principal repayments on amounts currently drawn under the project finance facility (for additional information see the CONTRACTUAL OBLIGATIONS section of this MD&A) as well as on-going debt service costs;
- The amount of cash flow that can be generated from open-pit operations; and
- The impact of COVID-19 on Oyu Tolgoi's open-pit operations and underground development.

As the work to complete the Definitive Estimate and to secure a long-term domestic power solution progress, Turquoise Hill continues to evaluate the impact of the estimated increases to underground capital expenditure, as well as delays to sustainable first production and the other important variables discussed above, on its cash flows, liquidity and financing projections and will update the market in due course. While the Company's funding requirements will be clarified by the ongoing work on the Definitive Estimate, which is still expected to be delivered in the second half of 2020, and by the power discussions, Turquoise Hill is well progressed in its discussions with Rio Tinto regarding its proposal for sourcing incremental interim funding to ensure the Company can progress the underground development over and above its \$2.2 billion of available liquidity.

**GOVERNMENT RELATIONS**

Turquoise Hill's ownership of the Oyu Tolgoi mine is held through a 66% interest in Oyu Tolgoi LLC. The remaining 34% interest in Oyu Tolgoi LLC is held by Erdenes Oyu Tolgoi LLC (Erdenes), a Mongolian state-owned entity. Turquoise Hill is obliged to fund Erdenes' share of the capital costs under the ARSHA.

Underground construction recommenced in May 2016 when Oyu Tolgoi LLC received the final requirement for the re-start of underground development: formal notice to proceed approval by the boards of Turquoise Hill, Rio Tinto (as project manager) and Oyu Tolgoi LLC. Approval followed the signing of the Oyu Tolgoi Underground Mine Development and Financing Plan (Underground Plan) in May 2015 and the signing of a \$4.4 billion project finance facility in December 2015. Development had been suspended in August 2013 pending resolution of matters with the Government of Mongolia.

Turquoise Hill's investment in the Oyu Tolgoi mine is governed by a 2009 Investment Agreement (Investment Agreement). The Investment Agreement framework was authorized by the Mongolian Parliament and was concluded after 16 months of negotiations. It was reviewed by numerous constituencies within the Government. Turquoise Hill has been operating in good faith under the terms of the Investment Agreement since 2009, and we believe not only that it is a valid and binding agreement, but that it has proven to be beneficial for all parties.

Adherence to the principles of the Investment Agreement, the ARSHA and the Underground Plan has allowed for the development of the Oyu Tolgoi mine in a manner that has given rise to significant long-term benefits to Mongolia. Benefits from the Oyu Tolgoi mine open-pit operations and underground development include, but are not limited to, employment, royalties and taxes, local procurement, economic development and sustainability investments.

**Oyu Tolgoi Mine Power Supply**

Oyu Tolgoi currently sources power from China's Inner Mongolian Western Grid via overhead power lines, via a back-to-back power purchase agreement with National Power Transmission Grid JSC (NPTG), the power importing entity, and the Inner Mongolian Power Company (IMPC).

Oyu Tolgoi LLC is obliged under the 2009 Oyu Tolgoi Investment Agreement to secure a long-term domestic source of power for the Oyu Tolgoi mine. The Power Source Framework Agreement (PSFA) entered into between Oyu Tolgoi LLC and the Government of Mongolia on December 31, 2018 provides a binding framework and pathway for the construction of a Tavan Tolgoi-based power solution (TTPP) for the Oyu Tolgoi mine by June 30, 2023. The power plant would be majority owned by Oyu Tolgoi LLC and situated close to the Tavan Tolgoi coal mining district located approximately 150 kilometres from the Oyu Tolgoi mine.

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On February 14, 2020, Oyu Tolgoi LLC submitted the TTPP Feasibility Study to the Government of Mongolia. The Feasibility Study comprises a 300 MW coal fired power plant and extensive regional infrastructure, including a 55 kilometres water pipeline and a 126 kilometres power line. The project cost estimate for TTPP is up to \$924 million, including consideration of certain amounts yet to be finalized such as government fees, licenses and certain reimbursements per previous agreements in relation to a Tavan Tolgoi based power solution. Oyu Tolgoi LLC has made significant progress to develop a cost competitive and optimal solution for TTPP with a fully negotiated EPC contract. As agreed under the PSFA, the Feasibility Study anticipates back-up power requirements for TTPP will be provided by IMPC until such time as they can be provided within Mongolia. The TTPP project aligns with the Parliament Resolution No.73 (2018) and the government policies to develop a power plant at the Tavan Tolgoi coal fields.

There is a provision under Oyu Tolgoi LLC's existing project finance documentation that permits, subject to certain conditions, an increase of Oyu Tolgoi LLC's senior debt cap in connection with an expansion facility, such as the proposed TTPP.

The PSFA specifies target dates for milestones to be achieved through mutual cooperation between Oyu Tolgoi LLC and the Government of Mongolia; several of those milestones have now passed. In accordance with the Contingency Arrangements clause 7.4 a ii of the PSFA, on February 14, 2020 Oyu Tolgoi LLC gave notice to the Government of Mongolia and it is currently seeking a mutually acceptable pathway to proceed with securing long-term domestic power supply for Oyu Tolgoi. Under this Contingency process, the parties have two months to agree the way forward on TTPP or move forward with an alternative option thereafter. Alternative options may include an Oyu Tolgoi mine site based power plant, a primary renewables solution or grid supply.

**Oyu Tolgoi tax assessment**

On January 16, 2018, Turquoise Hill announced that Oyu Tolgoi had received and was evaluating a tax assessment for approximately \$155 million (which was converted from Mongolian Tugrik to U.S. dollars at the exchange rate on that date) from the Mongolian Tax Authority (MTA) relating to an audit on taxes imposed and paid by Oyu Tolgoi LLC between 2013 and 2015. In January 2018, Oyu Tolgoi paid an amount of approximately \$4.8 million to settle unpaid taxes, fines and penalties for accepted items.

On February 20, 2020, the Company announced that Oyu Tolgoi will be proceeding with the initiation of a formal international arbitration proceeding in accordance with dispute resolution provisions within Chapter 14 of the Investment Agreement entered into with the Government of Mongolia in 2009 and Chapter 8 of the Oyu Tolgoi Underground Mine Development and Financing Plan entered into with the Government of Mongolia in 2015. The dispute resolution provisions call for arbitration under the United Nations Commission on International Trade Law (UNCITRAL) seated in London before a panel of three arbitrators.

By agreeing to resolve the dispute under UNCITRAL Arbitration Rules, both parties have agreed that the arbitral award shall be final and binding on both parties and the parties shall carry out the award without delay.

The Company remains of the opinion that Oyu Tolgoi has now paid all taxes and charges required under the Investment Agreement, the ARSHA, the Underground Plan and Mongolian law.

**Mongolian parliamentary working group**

In March 2018, the Speaker of the Mongolian Parliament appointed a Parliamentary Working Group (Working Group) that consisted of 13 Members of Parliament to review the implementation of the Investment Agreement. The Working Group established five sub-working groups consisting of representatives from government ministries, agencies, political parties, non-governmental organizations and professors, to help and support the Working Group. The Working Group was initially expected to report to the Parliament before the end of spring session in late June 2018.

On December 13, 2018, Oyu Tolgoi received a letter from the head of the Working Group confirming that the consolidated report, conclusions and recommendations of the Working Group had been finalized and was ready to be presented to the Parliament.

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On March 22, 2019, the Parliamentary press office announced that the Working Group report had been submitted to the National Security Council (President, Prime Minister and Speaker of the Parliament). On May 3, 2019, a summary of the Working Group report was received by Oyu Tolgoi. On May 6, 2019, Oyu Tolgoi provided the Economic Standing Committee of the Parliament a written response to the summary of the Working Group report.

As an outcome of the hearing, a new working group of nine Members of Parliament was established to take the Working Group Report and draft resolutions directing the Cabinet on recommendations related to Oyu Tolgoi.

Upon completion of the Working Group review and its report, a resolution was submitted to the Economic Standing Committee, and subsequently passed in a plenary session of the Parliament of Mongolia on November 21, 2019. The resolution was published on December 6, 2019 and includes resolutions to take comprehensive measures to improve the implementation of the Investment Agreement and the ARSHA, to improve the Underground Plan and to explore and resolve options to have a product sharing arrangement or swap Mongolia's equity holding of 34 per cent for a special royalty. Both Turquoise Hill and Rio Tinto announced that it noted the Parliament Resolution no.92.

**Anti-Corruption Authority information requests**

On March 13, 2018, we announced that Oyu Tolgoi LLC received information requests from the Mongolian Anti-Corruption Authority (ACA) for information relating to Oyu Tolgoi LLC. The ACA has also conducted interviews with representatives of Oyu Tolgoi LLC in connection with its investigation. Turquoise Hill has inquired as to the status of the investigation and Oyu Tolgoi LLC has informed the Company that the investigation appears to relate primarily to possible abuses of power by certain former Government officials in relation to the Investment Agreement, and that Oyu Tolgoi LLC is complying with the ACA's requests in accordance with relevant laws. To date, neither Turquoise Hill nor Oyu Tolgoi LLC have received notice from the ACA, or indeed from any regulator, that either company or their employees are subjects of any investigation involving the Oyu Tolgoi project.

The Investment Agreement framework was authorized by the Mongolian Parliament, concluded after 16 months of negotiations and reviewed by numerous constituencies within the Government. Turquoise Hill has been operating in good faith under the terms of the Investment Agreement since 2009, and we believe not only that it is a valid and binding agreement, but that it has proven to be beneficial for all parties.

Adherence to the principles of the Investment Agreement, ARSHA and Underground Plan has allowed for the development of the Oyu Tolgoi mine in a manner that has given rise to significant long-term benefits to Mongolia. Benefits from the Oyu Tolgoi open-pit operations and underground development include, but are not limited to, employment, royalties and taxes, local procurement, economic development and sustainability investments.

**CORPORATE ACTIVITIES****Management change**

On June 3, 2019, Turquoise Hill announced the appointment of Jo-Anne Dudley as Turquoise Hill's Chief Operating Officer.

**Board resignation announcement**

On July 10, 2019, Turquoise Hill announced that the Company's Board of Directors had accepted the resignation of director Dr. James Gill.

**Board appointment**

On January 21, 2020, Turquoise Hill announced the appointment of George R. Burns to the Company's Board of Directors as an independent director.



## **US Trading Price Non-Compliance**

On July 31, 2019, the Company received an automatic notice from the NYSE advising that the average closing price of the Common Shares had fallen below US\$1.00 for 30 consecutive trading days and that, as a result, the Common Shares no longer met the minimum US\$1.00 average closing price requirement. Under the NYSE rules, a company that fails to meet this continued listing requirement must bring its share price and average closing price above US\$1.00 by the end of the six-month period following receipt of the NYSE's notification. However, where a company has notified the NYSE that it intends to cure its minimum price deficiency by a corporate transaction requiring approval of its shareholders, it must obtain shareholder approval by no later than its next annual meeting and implement the transaction promptly thereafter, in which case the minimum price deficiency will be deemed to be cured if the share price promptly exceeds US\$1.00 and the price remains above that level for at least the following 30 consecutive trading days.

On August 28, 2019, the Company received an automatic notice from the NASDAQ advising that the minimum bid price of the Common Shares had fallen below US\$1.00 for 30 consecutive trading days and that, as a result, the Common Shares no longer met the minimum US\$1.00 bid price requirement. Under the Listing Rules of the NASDAQ, the Company had 180 calendar days to regain compliance.

On November 12, 2019, the Company announced that it expected to seek approval from Shareholders at the Meeting for a consolidation of its outstanding Common Shares. The announcement stated that the expected consolidation was intended to cure the share price non-compliance under the continued listing rules of both the NYSE and the NASDAQ.

On February 14, 2020, the Company announced that it had provided written notice to NASDAQ regarding its intention to voluntarily delist from the NASDAQ. Given that trading on the NASDAQ represented only approximately 5% of the worldwide trading volume of the Common Shares in 2019, the Company believes that the NYSE and the TSX listings provide investors with sufficient liquidity. In addition, delisting from the NASDAQ will reduce the Company's administrative costs. The NASDAQ delisting became effective on March 5, 2020.

The Company's common shares will continue to trade on the NYSE and the TSX now that the NASDAQ delisting has become effective. The delisting did not affect the Company's continuing obligation to file required reports with the U.S. Securities and Exchange Commission ("SEC") and Canadian securities regulatory authorities. The Company will comply with, and continue to be subject to, the laws of the Yukon, the jurisdiction in which the Company is incorporated, as well as applicable U.S. and Canadian securities laws and corporate governance rules applicable to Canadian publicly listed companies, including the rules of the NYSE and the TSX.

## **INCOME AND OTHER TAXES**

The Company recorded an income statement charge of \$157.1 million for income and other taxes during 2019, compared with a credit of \$140.6 million in 2018. Income and other taxes include adjustments to deferred tax assets in Mongolia and Canada, in addition to withholding taxes accrued and current tax payable.

Adjustments to deferred tax assets resulted in income statement charges within income and other taxes for 2019 of \$115.3 million. During 2019, there was a reduction to the amount of Mongolian deferred tax assets recognized of \$90.1 million and a reduction to Canadian deferred tax assets of \$25.2 million.

Deferred tax assets relate to tax operating losses, accrued but unpaid interest expense on shareholder loans and other temporary differences. Recoverability of these losses were assessed against an estimate of future taxable profits. Movements in the deferred tax assets result from period end reassessments of recoverability and include adjustments to record potential deferred tax assets not recognized in previous periods.

The adjustment to the Mongolian deferred tax asset during 2019 was primarily due to updated operating assumptions in mine planning during the period. This principally included the revised estimation of achievement of sustainable first production as well as the revised development capital spend for the underground project. The updated mine planning assumptions led to an increase in the amount of loss carry forwards and temporary differences estimated to expire unutilized. This was partly offset by the recognition of \$97.7 million of deferred

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tax assets resulting from additional operating losses and accrued but unpaid interest expense incurred by Oyu Tolgoi during 2019.

A negative effective tax rate of approximately 50% during 2019 arose as the Company reported a loss from continuing operations before tax of \$319.8 million, while recording in the same period a net income statement tax charge (inclusive of adjustments to deferred tax assets and accrued withholding taxes) of \$157.1 million.

During 2018, the Company recognized additional Mongolian deferred tax assets of \$165.9 million and additional Canadian deferred tax assets of \$9.8 million. A negative effective tax rate of approximately 50% during 2018 arose as the Company reported income from continuing operations before tax of \$253.6 million, while recording in the same period a net income statement tax credit (inclusive of adjustments to deferred tax assets and accrued withholding taxes) of \$140.6 million.

Turquoise Hill's effective tax rate represents the income statement charge or credit for income and other taxes as a percentage of income or loss from operations before taxes. It is possible for Turquoise Hill's effective tax rate to be in excess of 100%, primarily because of different tax jurisdictions applying different tax to intercompany loan interest, and/or previously unrecognized deferred tax assets being recorded in the current period.

Additional income statement information, including income and other taxes relating to Oyu Tolgoi LLC and the Company's corporate operations is provided in Note 3 – Operating segment – to the consolidated financial statements.

## **LIQUIDITY AND CAPITAL RESOURCES**

### **Cash flow**

**Operating activities.** Net cash used in operating activities was \$11.7 million in 2019 compared with net cash generated of \$180.0 million in 2018. Cash generated from operating activities before interest and tax was \$341.7 million in 2019 compared to \$363.0 million in 2018 primarily reflecting the impact of lower sales revenue and unfavorable movements in working capital. Interest paid in 2019 was \$427.5 million compared to \$261.4 million in 2018 resulting from the difference in timing of payment of the completion support fee to Rio Tinto. Interest received in 2019 was \$84.1 million compared to \$88.3 million in 2018 and income and other taxes paid in 2019 amounted to \$10.0 million compared to \$9.9 million in 2018.

**Investing activities.** Cash generated from investing activities was \$66.9 million in 2019, compared with cash used of \$33.7 million in 2018. Cash generated from investing activities in 2019 reflects \$1.4 billion withdrawn from the Company's Cash Management Services Agreement (CMSA) offset by corresponding capital expenditure<sup>7</sup> of \$1.3 billion. Under the CMSA, entered into on December 15, 2015 as part of Project Finance, amounts totaling \$4.2 billion were placed in 2016 with a subsidiary of Rio Tinto. The resulting receivable, which represented substantially all of the net proceeds received on drawdown of the project finance facility in 2016, are returned to Turquoise Hill as required for purposes of Oyu Tolgoi underground mine development and financing. As of December 31, 2019, amounts totaling \$3.7 billion have been withdrawn and provided to Oyu Tolgoi LLC.<sup>6</sup>

**Financing activities.** Cash used in financing activities in 2019 was \$6.5 million, which primarily resulted from payments made in relation to lease liabilities in the year due to the Company's adoption of IFRS 16, Leases, from January 1, 2019 – please refer to section Changes in Accounting Policies. Cash generated from financing activities in 2018 of \$12.9 million resulted from drawdowns on the Company's facility with the Export-Import Bank of the United States.

### **Liquidity**

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<sup>6</sup> Please refer to Section – Our Business – on page 6 and to RELATED-PARTY TRANSACTIONS on page 37 of this MD&A.

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As of December 31, 2019, Turquoise Hill held consolidated cash and cash equivalents of approximately \$1.7 billion (December 31, 2018: \$1.6 billion) and consolidated working capital<sup>7</sup> of negative \$252.6 million (December 31, 2018: negative \$174.1 million). The movement in working capital during 2019 was primarily due to a decrease in inventories and increase in payables. Consolidated working capital is expected to remain negative or below previously reported levels while expenditure on underground development continues and associated payables are recorded.

A \$4.2 billion related-party receivable with a Rio Tinto subsidiary was recorded in 2016, representing net proceeds (after settlement of withholding taxes and transaction costs) from project finance tranches drawn down before June 30, 2016 and placed with Rio Tinto in accordance with the CMSA. Turquoise Hill draws upon this related-party receivable as required in order to fund development and financing of the underground mine. As of December 31, 2019, \$3.7 billion had been re-drawn from this related-party receivable, leaving a balance of \$0.5 billion.

Turquoise Hill manages liquidity risk by the preparation of internally generated short-term cash flow forecasts. These short-term cash flow forecasts consider the aggregation of non-cancellable obligations together with an estimation of future operating costs, financing and tax costs, capital expenditures and cash receipts from sales revenue. Sensitivity analyses are performed over these estimates including the impact of estimated commodity prices on cash receipts.

Turquoise Hill believes that it has enough liquidity to meet its minimum obligations for a period of at least 12 months from the balance sheet date, to fund its operations and underground development, as well as the progression of a Tavan Tolgoi-based power plant. Taking into consideration the estimated impacts of recently announced increases to underground development capital, as well as delays to first sustainable production, the Company expects to need significant incremental financing to sustain its underground development and construction of the Tavan Tolgoi-based power plant beyond this timeframe. See "Funding of Oyu Tolgoi LLC by Turquoise Hill".

**Capital resources**

The Company considers its capital to be share capital and third-party borrowings. To effectively manage capital requirements, the Company has in place a planning and budgeting process to help determine the funds required to ensure the Company has the appropriate liquidity to meet its strategic and operating needs.

In December 2015, Oyu Tolgoi LLC signed the \$4.4 billion project finance facility for the purposes of developing the underground mine, of which \$4.3 billion had been drawn down at December 31, 2019. The additional \$0.1 billion is available, subject to certain conditions, under the Company's facility with the Export-Import Bank of the United States. As of December 31, 2019, \$3.7 billion had been advanced to Oyu Tolgoi LLC, leaving a balance of \$0.5 billion placed on deposit with Rio Tinto in accordance with the CMSA (out of the original net proceeds of \$4.2 billion). The project finance lenders have agreed a debt cap of \$6.0 billion thus allowing the potential for an additional \$1.6 billion of supplemental debt to be raised in the future. Under the project finance agreements, the \$6.0 billion debt cap may be increased in connection with an expansion facility, which includes the construction of a Tavan Tolgoi-based power project, for up to an amount equal to the estimated total cost of such a facility, including financing and related costs and fees, subject to the fulfilment of certain conditions. We are working with Oyu Tolgoi LLC and Rio Tinto to assess the impact of the announced delays to sustainable first production on the project financing agreements and the Company's obligations thereunder.

The Company's accumulated deficit at December 31, 2019 was \$3.8 billion, compared to \$3.7 billion at December 31, 2018.

**SHARE CAPITAL**

As of March 20, 2020, the Company had a total of 2,012,314,469 common shares outstanding.

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<sup>7</sup> Please refer to Section – NON-GAAP MEASURES – on page 40 of this MD&A for further information.



## **COPPER, GOLD AND FOREIGN EXCHANGE MARKET COMMENTARY**

The information below is in addition to disclosures already contained in this report regarding the Company's operations and activities.

### **Copper and gold markets**

Copper prices averaged \$5,890/t in Q4 2019 (+1.6% from \$5,800/t in Q3 2019) as markets regained some confidence towards the end of the quarter and investor sentiment improved. Key sources of optimism were the positive news flow about China and the US signing phase 1 of the trade deal, an easing of concerns over a US recession in the near term and better macroeconomic data out of Europe. On the financial side, the decidedly net-short investor positioning that weighed heavily on copper prices for most of 2019 was unwound. On December 31, 2019, investors had swung to a mild but encouraging net-long position. Visible cathode stocks (SHFE, LME, COMEX and bonded) continued to decline from 715kt at the end of Q3 2019 to 550kt at the end of Q4 2019, the lowest seen since at least 2010.

In the concentrate market, spot treatment charges declined through most of Q4 2019 to hit a low of \$50.6/t in early December 2019, as political turmoil in Chile affected logistics at some mining operations and a two-day general strike left 10 ports out of action. Market participants re-rated expectations about the tightness of the concentrate market for 2020, after smelters and miners gathered at CESCO Shanghai in November and set the 2020 TC benchmark at \$62/t, a 23% decline year over year. Spot terms picked up slightly at the end of the year, following news that Donying Fangyuan smelter was in financial troubles and had to liquidate some cargoes at above-market spot rates.

Gold prices averaged \$1,481/oz over Q4 2019 (+0.6% from Q3 2019), declining for most of the quarter as markets responded favourably to positive news flow on macro and political developments, including strong US macro data and the potential for an orderly Brexit process. Prices spiked towards the end of the year as markets were impacted by geopolitical uncertainty around US-Iran tensions in the Middle East. Despite near term volatility, gold remains attractive as an investment, with gold-backed ETFs at an all-time high and Central Banks continuing to build their gold reserves.

### **Foreign exchange rates**

Oyu Tolgoi LLC's sales are settled in U.S. dollars and a portion of its expenses are incurred in local currencies. Short-term foreign exchange fluctuations could have an effect on Turquoise Hill's operating margins; however, in view of the proportion of locally incurred expenditures, such fluctuations are not expected to have a significant impact on Turquoise Hill's long-term financial performance.

## **OFF-BALANCE SHEET ARRANGEMENTS**

With the exception of the Company's power commitments disclosed within the section CONTRACTUAL OBLIGATIONS and "Oyu Tolgoi Mine Power Supply", as at December 31, 2019, Turquoise Hill was not a party to any off-balance sheet arrangements that have, or are reasonably likely to have, a significant current or future effect on the results of operations, financial condition, revenues or expenses, liquidity, capital expenditures or capital resources of the Company. Since the adoption of IFRS 16, *Leases*, from January 1, 2019, the Company's operating lease commitments are now recorded on-balance sheet – refer to Changes in Accounting Policies on page 21.

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**CONTRACTUAL OBLIGATIONS**

The following table summarizes Turquoise Hill's contractual obligations as at December 31, 2019.<sup>8</sup>

(Stated in \$000's of dollars)	Payments Due by Period				Total
	Less than 1 year	1 - 3 years	4 - 5 years	After 5 years	
Project finance facility <sup>(1)</sup>	\$ 23,289	\$ 446,972	\$ 1,446,635	\$ 2,432,022	\$ 4,348,918
Purchase obligations <sup>(2)</sup>	684,913	84,259	-	-	769,172
Power commitments	115,427	230,854	58,002	-	404,283
Lease liabilities	4,387	1,637	13,697	2,034	21,755
Decommissioning obligations	-	-	-	212,633	212,633
<b>Total</b>	<b>\$ 828,016</b>	<b>\$ 763,722</b>	<b>\$ 1,518,334</b>	<b>\$ 2,646,689</b>	<b>\$ 5,756,761</b>

(1) These amounts relate to principal repayments on the project finance facility.

(2) These amounts mainly represent various long-term contracts that include commitments for future development and operating payments for supply of engineering, equipment rentals and other arrangements.

**CHANGES IN ACCOUNTING POLICIES**

There were two changes in Turquoise Hill's accounting policies during 2019.

IFRS 16, *Leases*, was effective and has been applied by the Company from January 1, 2019. The Company applied IFRS 16 using the modified retrospective approach and therefore the comparative information has not been restated and continues to be reported under IAS 17, *Leases*. Refer to Note 2 (t) of the Company's consolidated financial statements for the year ended December 31, 2019 for the complete accounting policy.

On January 1, 2019, the Company recognized a right of use asset of \$14.4 million and a corresponding lease liability of \$16.1 million, recognizing the difference in Equity (\$1.1 million in Deficit and \$0.6 million in Non-controlling interest). The following is a reconciliation of the Company's operating lease commitments immediately preceding the adoption of IFRS 16 to the lease liability recorded on January 1, 2019:

Operating leases - aggregate of minimum lease payments under non-cancellable leases reported at December 31, 2018	\$ 25,861
Short term leases (under one year) - undiscounted	(3,340)
Finance lease liability already on balance sheet at December 31, 2018	12,057
Effects of discounting on payments included in the calculation of the lease liability (excluding finance lease balances)	(2,942)
Lease liability opening balance at January 1, 2019	\$ 28,188
Less: Finance lease liability already on balance sheet at December 31, 2018	(12,057)
IFRS 16 lease liability opening balance at January 1, 2019	\$ 16,131

The Company applied the following optional practical expedients permitted under the standard:

- For short-term leases (lease term of 12 months or less) and leases of low-value assets (such as personal computers and office furniture), the Company opted to recognize a lease expense on a straight-line basis;
- To exclude any initial direct costs from the measurement of the right of use asset at transition; and
- To apply the use of hindsight when reviewing the lease arrangement for determination of the measurement or term of the lease under the retrospective method.

<sup>8</sup> Please refer to the section NON-GAAP MEASURES on page 40 of this MD&A for further information.

IFRIC 23, *Uncertainty Over Income Tax Treatments* changed the method of calculating provisions for uncertain tax positions. The Company previously recognized provisions based on the most likely amount of the liability, if any, for uncertain tax positions. IFRIC 23 requires an entity to first consider if it is probable that a taxation authority will accept an uncertain tax treatment. If it is concluded that it is not probable, a probability weighted approach is to be taken for issues for which there are a wide range of possible outcomes. For tax issues with a binary outcome, the most likely amount method still remains. The initial adoption of IFRIC 23 had no impact on the Company's consolidated financial statements.

## **CRITICAL ACCOUNTING ESTIMATES**

The preparation of financial statements in conformity with IFRS requires Turquoise Hill to establish accounting policies and to make estimates that affect both the amount and timing of the recording of assets, liabilities, revenues and expenses. Some of these estimates require judgments about matters that are inherently uncertain.

A detailed summary of all of the Company's significant accounting policies and the key sources of estimation uncertainty that have a risk of resulting in a material adjustment to the carrying amount of assets and liabilities within the next twelve months are included in Note 2 to the consolidated financial statements for the year ended December 31, 2019. While all of the key sources are important to the Company's consolidated financial statements, the following key sources have been identified as being critical:

- Going concern assessment;
- Recoverable amount of property, plant and equipment;
- Income taxes;
- Reserves and resources;
- Decommissioning costs; and
- Net realizable value of inventories.

### **Going concern assessment**

The Company has made judgements, based on an internally generated short-term cash flow forecast, in concluding that there are no material uncertainties related to events or conditions that may cast significant doubt upon the Company's ability to continue as a going concern. Judgements and estimates are made in forming assumptions of future activities, future cash flows and timing of those cash flows. Significant assumptions used in preparing the short-term cash flow forecast includes, but is not limited to, short-term commodity prices, reserves, operating costs, financing costs and development capital. Changes to these assumptions could affect the estimate of the Company's conclusion as to whether there are material uncertainties related to events or conditions that may cast significant doubt upon the Company's ability to continue as a going concern.

### **Recoverable amount of property, plant and equipment**

When an impairment review is undertaken, the recoverable amount is assessed by reference to the higher of value in use (VIU) and fair value less costs of disposal ("FVLCD"). The VIU is the net present value of expected future pre-tax cash flows from the relevant cash-generating unit in its current condition, both from continuing use and ultimate disposal. FVLCD is estimated either from the value obtained from an active market where applicable, or by using a discounted post-tax cash flow model based on detailed life-of-mine and/or production plans. FVLCD will always exceed VIU at Oyu Tolgoi because there is incremental value in its resources that cannot be included in a VIU assessment. Significant assumptions used in the discounted cash flow model include estimates of long-term commodity prices, discount rates, reserves and resources, operating costs, development capital, and scheduling and mine design.

These inputs are based on the Company's best estimates of what an independent market participant would consider appropriate. Changes to these inputs may alter the results of the impairment test, the amount of the impairment charge recorded in the consolidated statement of income and the resulting carrying value of property, plant and equipment.



An assessment of recoverable amount was undertaken as at June 30, 2019 and as at December 31, 2019; refer to Note 13 of the Company's consolidated financial statements for the year ended December 31, 2019.

### **Income taxes**

The Company must make significant estimates in respect of the provision for income taxes and the composition of its deferred income tax assets and deferred income tax liabilities. The Company's operations are, in part, subject to foreign tax laws where interpretations, regulations and legislation are complex and can be subject to change. As a result, there are usually some tax matters in question which may, on resolution in the future, result in adjustments to the amount of current or deferred income tax assets or liabilities, and those adjustments may be material to the Company's balance sheet and results of operations.

The Company recognizes potential liabilities and records tax liabilities for uncertain tax positions based on its judgement of whether, and the extent to which, additional taxes will be due. The Company adjusts these liabilities as facts and circumstances change. Due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from the Company's current estimate, which could result in material adjustments to the consolidated financial statements. Refer to Note 23 of the Company's consolidated financial statements for further information on tax matters between Oyu Tolgoi and the Mongolian Tax Authority.

The Company assesses the recoverability of deferred tax assets at each reporting period-end based on future taxable income to determine the deferred tax asset to be recognized. Significant assumptions used to determine future taxable income include: estimates for long-term commodity prices, reserves and resources, operating costs, financing costs, development capital, and scheduling and mine design. Revisions to these estimates could result in material adjustments to the financial statements.

### **Reserves and resources**

Mineral reserves and resources estimates are based on various assumptions relating to operating matters set forth in National Instrument 43-101. These include production costs, mining and processing recoveries, cut-off grades, long-term commodity prices, inflation rates and the costs and availability of treatment and refining services for the metals mined. Cost estimates are based on feasibility study estimates and operating history. The Company estimates its mineral reserves and resources based on information compiled and reviewed by qualified persons as defined in accordance with National Instrument 43-101 requirements.

Estimated mineral reserves are used to determine the depreciation of property, plant and equipment; to account for capitalized deferred stripping costs; to perform, when required, assessments of the recoverable amount of property, plant and equipment; as an input to the projection of future taxable profits which support assessments of deferred income tax recoverability; and to forecast the timing of the payment of decommissioning obligations.

### **Decommissioning costs**

The estimate of decommissioning costs is based on future expectations in the determination of closure provisions. Management makes a number of assumptions and judgements including: estimating the amount of future reclamation costs and their timing, inflation rates and risk-free discount rates. These assumptions are formed based on environmental and regulatory requirements and the Company's internal policies. The costs are more uncertain the further into the future the mine closure activities are to be carried out. Actual costs incurred in future periods in relation to the remediation of the Company's existing assets could differ materially from their estimated undiscounted future value. Refer to Note 17 of the Company's consolidated financial statements for the Company's total decommissioning obligations recorded in the consolidated financial statements, the undiscounted values and the rate used to discount the liability.

### **Net realizable value of inventories**

Inventory, including stockpiles of ore, are valued at the lower of weighted average cost and net realizable value ("NRV"). If ore stockpiles are not expected to be processed within the 12 months after the balance sheet date, they are included within non-current assets and net realizable value is calculated on a discounted cash flow

basis over the planned processing timeframe for such ore. Evaluating NRV requires management judgement in the selection of estimates for, among other inputs, discount rate, price assumptions, timing of processing and costs to complete.

## **RECENT ACCOUNTING PRONOUNCEMENTS**

A number of new standards, and amendments to standards and interpretations, are not yet effective for the year ending December 31, 2019, and have not been applied in preparing these consolidated financial statements. None of these standards and amendments to standards and interpretations are expected to have a significant effect on the consolidated financial statements of the Company.

## **RISKS AND UNCERTAINTIES**

Turquoise Hill is subject to a number of risks due to the nature of the industry in which it operates the present state of development of its business and the foreign jurisdictions in which it carries on business. The following is a summary description of the material risks and uncertainties to which the Company is subject. Some of the following statements are forward-looking and actual results may differ materially from the results anticipated in these forward-looking statements. Please refer to Section – FORWARD-LOOKING STATEMENTS AND FORWARD-LOOKING INFORMATION – on page 44 of this MD&A. If any of such risks or risks not currently known to Turquoise Hill actually occurs or materializes, the Company's business, financial condition or results of operations could be adversely affected, even materially adversely affected.

### **The Company may be limited in its ability to enforce the Investment Agreement and the Underground Plan against Mongolia, a sovereign government.**

The Investment Agreement and the Underground Plan impose numerous obligations and commitments upon the Government of Mongolia that provide clarity and certainty in respect of the development and operation of Oyu Tolgoi. The Investment Agreement also includes a dispute resolution clause that requires the parties to resolve disputes through international commercial arbitration procedures. Nevertheless, if and to the extent that the Government of Mongolia does not observe the terms and conditions of the Investment Agreement and the Underground Plan, there may be limitations on the Company's ability to enforce the terms of the Investment Agreement and the Underground Plan against the Government of Mongolia, which is a sovereign nation, regardless of the outcome of any arbitration proceeding. In addition, the Mongolian Parliament passed resolutions on December 6, 2019 mandating the Government of Mongolia to take necessary measures to ensure the benefits to Mongolia of Oyu Tolgoi, including comprehensive measures to improve the implementation of the Investment Agreement and to improve the Underground Plan. If the terms of the Investment Agreement and/or the Underground Plan cannot be enforced effectively, the Company would be limited in its ability to enforce its contractual rights and could be deprived of substantial rights and benefits arising from its investment in Oyu Tolgoi with little or no recourse against the Government of Mongolia for fair and reasonable compensation. Irrespective of the ultimate outcome of any potential dispute, any requirement to engage in discussions or proceedings with the Government of Mongolia, whether or not formal, would result in significant delays, expense and diversion of management's attention. Such an outcome would have a material adverse impact on the Company and its share price.

### **The Company's ability to carry out its activities in multiple jurisdictions, including Mongolia, is subject to legal and political risks.**

Although the Company expects that the Investment Agreement and the Underground Plan will continue to bring significant stability and clarity to the legal, political and operating environment in which the Company will develop and operate Oyu Tolgoi, the Company remains subject to legal and political risks in Mongolia. In addition, the Government of Mongolia also owns a significant stake in Oyu Tolgoi LLC which holds the Oyu Tolgoi property.

There can be no absolute assurance that the Company's assets will not be subject to nationalization, requisition, expropriation or confiscation, whether legitimate or not, by any authority or body. In addition, there can be no assurance that the political and economic policies of neighbouring countries, including China, in relation to Mongolia will not have adverse economic effects on the development of the Company's mining projects,

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including its ability to access power, transport (including across borders) and sell its products and access construction labour, supplies and materials. There is no assurance that provisions under Mongolian law for compensation and reimbursement of losses to investors under such circumstances would be effective to restore the full value of the Company's original investment or to compensate for the loss of the current value of the Mongolian projects. Insofar as the Government of Mongolia is a sovereign entity against which the terms of the Investment Agreement and the Underground Plan may take considerable time to enforce (if enforceable at all), this risk applies to Oyu Tolgoi despite the provisions of the Investment Agreement respecting nationalization and expropriation. There can be no assurance that Mongolian laws protecting foreign investments will not be amended or abolished or that existing laws will be enforced or interpreted to provide adequate protection against any or all of the risks described herein. There can be no assurance that there would not be disputes resulting from multiple levels of corporate and/or governmental approvals and differing sophistication in relevant business and technical matters, inequality of bargaining power and incompatible strategic and economic objectives (both in the short term and the longer term) among the shareholders of Oyu Tolgoi LLC which could have a material adverse impact on the Company's business prospects, results of operations and financial condition.

The Company carries out its activities in countries which may be affected in varying degrees by political stability, government regulations (including but not restricted to those related to the mining industry) and domestic or foreign investment therein, and by the policies of other nations in respect of these countries. Any changes in regulations or shifts in political conditions are beyond the control of the Company and may adversely affect its business. The Company's mining, exploration and financing activities may be affected to varying degrees by government regulations, or other political and administrative undertakings, including those with respect to restrictions on production, price controls, export controls, income and other taxes, expropriation of property, employment, land use, water use, environmental legislation and mine safety. The Company may be subject to disputes or issues with customs officials or border crossings affecting the shipment of the Company's products in jurisdictions in which it operates, and the ability of its customers to collect such products may arise and could have an adverse effect on the Company's ability to collect and/or recognize revenue. In addition, in the various jurisdictions where the Company operates and finances its business activities (including Mongolia, China, U.S., Canada and Europe), the Company is subject to taxes (including income taxes and mining taxes) and it may from time to time be subject to disputes with tax authorities over the interpretation and application of existing tax legislation and/or computation of taxes owing to such jurisdictions. The Company also faces risks regarding future changes in the tax laws of such jurisdictions (and future changes in the way such tax authorities interpret and apply existing tax legislation) that could increase the amount of taxes owing. The Company's activities may also be affected to varying degrees by terrorism, military repression, crime, extreme fluctuations in currency exchange rates and high inflation.

Moreover, the legal framework in Mongolia is, in many instances, based on recent political reforms or newly enacted legislation, which may not be consistent with long-standing conventions and customs. Although legal title risks in respect of Oyu Tolgoi are believed to be significantly mitigated by the terms of the Investment Agreement, there may still be ambiguities, inconsistencies and anomalies in the other agreements, licenses and title documents through which the Company holds its direct or indirect interests in other mineral resource properties in Mongolia, or the underlying legislation upon which those interests are based, which are atypical of more developed legal systems and which may affect the interpretation and enforcement of the Company's rights and obligations. Many laws of certain of the countries in which the Company carries out its activities have been enacted, but in many instances they are neither understood nor enforced and may be applied in an inconsistent, arbitrary and unfair manner due to the substantial administrative discretion granted to the responsible government officials or agencies, while legal remedies may be uncertain, delayed or unavailable. These laws or their enforcement by national, regional or local authorities can adversely affect, among other things, water access rights, operating costs resulting from unanticipated increases in tariff rates and overall assessment of risk. These uncertainties could limit the legal protections available to the Company. Even the Company's best efforts to comply with the laws and regulations may not result in effective compliance in the determination of government representatives, which may have a material adverse impact on the Company and its share price. Accordingly, while the Company believes that it has taken the legal steps necessary to obtain and hold its property and other interests in Mongolia, there can be no guarantee that such steps will be sufficient to preserve those interests.



**RTIH, as the holder of a majority of the common shares, as manager of Oyu Tolgoi, and as manager of a substantial portion of Turquoise Hill's receivables and liquid asset deposits, has the ability to exert a significant degree of control over the Company, Oyu Tolgoi LLC and Oyu Tolgoi.**

RTIH, a wholly-owned subsidiary of Rio Tinto, together with other Rio Tinto affiliates, owns a majority of the outstanding Common Shares and can exercise its voting power to elect all of the members of the Board of Directors, subject to applicable securities legislation. RTIH can also exercise its majority voting power to unilaterally pass any ordinary resolution submitted to a vote of the Company's shareholders, except for resolutions in respect of which RTIH is an interested party and for which disinterested shareholder approval is required. In addition, under the HoA, RTIH was appointed as manager of Oyu Tolgoi which provides RTIH with responsibility for the management of Oyu Tolgoi.

RTIH is also able to exert a significant degree of control over the management, development and operation of Oyu Tolgoi, as well as the Company, through a series of governance mechanisms and restrictive covenants established under the Private Placement Agreement, the HoA and other agreements entered into with Rio Tinto. These include the Technical Committee established under the Private Placement Agreement and the Operating Committee established under the HoA, through which RTIH is able to control decisions respecting the business of Oyu Tolgoi LLC subject to a veto of the Company in respect of certain special matters.

In addition, on December 15, 2015, the Company entered into the Cash Management Services Agreement with 9539549 Canada Inc., a wholly-owned subsidiary of Rio Tinto, pursuant to which the net proceeds from the Project Finance Facility are to be placed with and managed by 9539549 Canada Inc. until they are returned to Turquoise Hill for purposes of funding the underground at Oyu Tolgoi. Although RTIH has guaranteed the obligations of 9539549 Canada Inc. under the Cash Management Services Agreement, a delay in the return of such funds when requested by Turquoise Hill, or the unavailability of such funds for any reason, could result in a material adverse effect on the Company.

In May 2016, the Company and its wholly-owned subsidiary, Movele S.à r.l., entered into the Movele Deposit Agreement, pursuant to which Movele S.à r.l. deposited funds with RTF, which are invested or deposited by RTF for fixed terms. The inability of Movele S.à r.l. to access cash and cash equivalent investments on deposit with RTF under the Movele Deposit Agreement, in a timely manner or at all due to circumstances which limit RTF's ability to return such funds to Movele S.à r.l. could have a material adverse impact on Turquoise Hill and its business.

Moreover, RTIH may not be supportive of the Company's funding proposals for the development of the Oyu Tolgoi mine. The interests of RTIH and the interests of the Company's other shareholders may not necessarily be aligned in all respects and there can be no assurance that RTIH, together with other Rio Tinto affiliates, will exercise its rights as the Company's majority shareholder and its other contractual rights under the Private Placement Agreement, the HoA and other agreements entered into with Rio Tinto in a manner that is consistent with the best interests of either the Company or the Company's other shareholders.

**The Company's actual production, revenues and capital expenditures may differ materially from mineral reserve estimates.**

Market fluctuations in the price of metals or increases in the costs to recover metals from the Company's mining projects may render mining of mineral reserves uneconomical and affect the Company's operations in a materially adverse manner. Moreover, various short-term operating factors may cause a mining operation to be unprofitable in any particular accounting period.

Prolonged declines in the market price of metals may render reserves containing relatively lower grades of mineralization uneconomic to exploit and could materially reduce the Company's reserves and resources. Should such reductions occur, material write-downs of the Company's investments in mining properties or the discontinuation of development or production might be required, and there could be cancellations of or material delays in the development of new projects, increased net losses and reduced cash flow. The estimates of mineral reserves and resources attributable to a specific property are based on internationally accepted engineering and evaluation principles. The estimated amount of contained metals in proven mineral reserves

and probable mineral reserves does not necessarily represent an estimate of a fair market value of the evaluated properties.

The Company uses prices reflecting market pricing projections in the financial modeling for Oyu Tolgoi which are subjective in nature. It should be expected that actual prices will be different than the prices used for such modelling (either higher or lower), and the differences could be significant.

A number of the uncertainties relate to the costs and availability of smelting services for the metals mined from Oyu Tolgoi, which require arrangements with third parties and involve the potential for fluctuating costs to transport the metals and fluctuating costs and availability of such services. These costs can be significantly impacted by a variety of industry-specific and also regional and global economic factors (including, among others, those which affect commodity prices). Many of these factors are beyond the Company's control.

**The actual cost of developing Oyu Tolgoi may differ materially from the Company's estimates, and development may involve unexpected problems or delays.**

The Company's estimates regarding the cost of development and operation of Oyu Tolgoi are estimates only and are based on many assumptions and analyses made by the Company's management in light of their experience and perception of historical trends, current conditions and expected future developments, as well as other factors management believes are appropriate in the circumstances. These estimates and the assumptions upon which they are based are subject to a variety of risks and uncertainties and other factors that could cause actual expenditures to differ materially from those estimated. If these estimates prove incorrect, the total capital expenditures required to complete development of the underground components of Oyu Tolgoi may increase, which may have a material adverse impact on the Company, its results of operations, financial condition and share price. Specifically, the estimated schedule delay and cost increase announced in July 2019 for the completion of the underground development, including in respect of timing of sustainable first production and the development capital spend for the project, may differ materially as a result of the outcome of the definitive estimate review and further technical work to be conducted in connection therewith.

In addition to the requirements of the Investment Agreement, there are also a number of uncertainties inherent in the development and construction of any new or existing mine, including Oyu Tolgoi. These uncertainties include the timing and cost, which can be considerable, of the construction of mining and processing facilities; the availability and cost of skilled labour, ground and rock mass conditions and stability, the impact of fluctuations in commodity prices, process water, power and transportation, including costs of transport for the supply chain for Oyu Tolgoi, which requires routing approaches which have not been fully tested; the annual usage fees payable to the local province for sand, aggregate and water; the availability and cost of appropriate smelting and refining arrangements; and the need to obtain necessary environmental and other government permits, such permits being on reasonable terms, and the timing of those permits. The cost, timing and complexities of mine construction and development are increased by the remote location of a property such as Oyu Tolgoi.

It is common in mining operations and in the development, construction or expansion of existing facilities to experience unexpected problems and delays during such activities, which may cause delays in the commencement or expansion of mineral production or sustainable production. Such delays could have unforeseen impacts on disclosed project economics. Accordingly, there is no assurance that the current or future development, construction or expansion activities will be successfully completed within cost estimates, on schedule or at all and, if completed, there is no assurance that such activities will result in profitable mining operations.

**The mineral resource and mineral reserve estimates are estimates only and are subject to change based on a variety of factors, some of which are beyond the Company's control.**

The estimates of mineral reserves and mineral resources, including the anticipated tonnages and grades that are expected to be achieved or the indicated level of recovery that will be realized, are estimates and no assurances can be given as to their accuracy. Such estimates are, in large part, based on interpretations of geological data obtained from drill holes and other sampling techniques and modelling assumptions and

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parametres. Large-scale continuity and character of the Company's deposits will only be determined once significant additional drilling and sampling has been completed and analyzed. Actual mineralization or formations may be different from those predicted. Reserve and resource estimates are materially dependent on prevailing metal prices and the cost of recovering and processing minerals at the individual mine sites.

The estimated mineral resources and mineral reserves should not be interpreted as assurances of commercial viability or potential or of the profitability of any future operations. Investors are cautioned not to place undue reliance on these estimates. In addition, inferred mineral resources are quoted in the AIF. Inferred mineral resources have a great amount of uncertainty as to their existence, and economic and legal feasibility. Accordingly, there is no assurance that inferred mineral resources will ever be upgraded to a higher category. Investors are cautioned not to assume that part or all of an inferred mineral resource exists, or is economically or legally mineable.

There are numerous uncertainties inherent in estimating quantities of mineral reserves and resources. The estimates referenced are based on various assumptions relating to commodity prices and exchange rates during the expected life of production, mineralization of the area to be mined, the projected cost of mining, and the results of additional planned development work. Actual future production rates and amounts, revenues, taxes, operating expenses, environmental and regulatory compliance expenditures, development expenditures, and recovery rates may vary substantially from those assumed in the estimates. Many of the projections and estimates are based on subjective views and assumptions. Any significant change in these assumptions, including changes that result from variances between projected and actual results, could result in material downward revision to current estimates, which may have a material adverse impact on the Company and its share price.

**There can be no assurance that the Company will be able to secure the funding that it needs to continue development of the Oyu Tolgoi underground mine.**

Additional funding will be required to complete the development of the underground mine, which could potentially include construction of a power facility at Tavan-Tolgoi pursuant to the PSFA, and such additional funding, may not be available or available on reasonable commercial terms. If the full amount of project and other financing required to complete these developments of the underground mine is not available or obtainable on reasonable commercial terms for such purposes or funding from the Oyu open pit mine operations is insufficient, the Company could seek to issue Common Shares or instruments convertible into equity, including through future rights offerings, which issuances could result in dilution to the holders of Common Shares and have a material adverse effect upon the market price of Common Shares. Under the terms of the covenants forming part of the Turquoise Hill Financing Support Agreement, the Company is prohibited from creating, incurring or permitting to remain outstanding any indebtedness, other than certain permitted indebtedness, and from amending its constating documents to create and issue Preferred Shares. As a result of these restrictions, in seeking to raise additional capital, the Company may not incur indebtedness for borrowed money or issue debt securities, other securities convertible into debt securities or Preferred Shares while the covenants forming part of the Turquoise Hill Financing Support Agreement are in force and effect unless it obtains a waiver or consent from RTIH permitting the incurrence of such indebtedness or the issuance of such securities.

**Recent and future amendments to Mongolian laws and regulations, whether actual or the interpretation thereof, could adversely affect the Company's activities, its mining rights in Oyu Tolgoi, or make it more difficult or expensive to develop such project and carry out mining in Mongolia.**

The Government of Mongolia has put in place a framework and environment for foreign direct investment. However, there are political constituencies within Mongolia that have espoused ideas that would not be regarded by the international mining industry as conducive to foreign investment if they were to become law or official government policy. There can be no assurance that the present or future Parliament will refrain from enacting legislation that undermines the Investment Agreement or otherwise adversely impacts Oyu Tolgoi or that the present or a future government will refrain from adopting government policies or seeking to renegotiate the terms of the Investment Agreement in ways that are adverse to the Company's interests or that impair the Company's ability to develop and operate Oyu Tolgoi or other projects on the basis presently contemplated, which may have a material adverse impact on the Company and its share price.

In addition, mining operations, exploration and related financing activities are subject to extensive laws and regulations. These relate to production, development, exploration, exports, imports, taxes and royalties, labour standards, occupational health, waste disposal, protection and remediation of the environment, access to water, mine decommissioning and reclamation, mine safety, toxic substances, transportation safety and emergency response and other matters.

Compliance with these laws and regulations increases the costs of exploring, drilling, financing, developing, constructing, operating and closing mines and other facilities. It is possible that the costs, delays and other effects associated with these laws and regulations may impact the Company's decision as to whether to continue to operate in a particular jurisdiction or whether to proceed with exploration or development of properties and the nature of related investing and financing arrangements.

Since legal requirements change frequently, are subject to interpretation and may be enforced to varying degrees in practice, the Company is unable to predict the ultimate cost of compliance with these changes and their effect on operations or other business activities. Furthermore, changes in governments, regulations, interpretations, policies or practices could have an adverse impact on the Company's future cash flows, earnings or results of operations and financial condition, which may have a material adverse impact on the Company and its share price.

**The Investment Agreement commits Oyu Tolgoi LLC to eventually utilize only Mongolian power sources.**

The Investment Agreement commits Oyu Tolgoi LLC to eventually utilize Mongolian power sources. Although Oyu Tolgoi LLC entered into the PSFA with the Government of Mongolia in December 2018, which provides a binding framework and pathway forward for the construction of the TTPP Project, as well as establishes the basis for a long-term domestic power solution for Oyu Tolgoi, there is no certainty that this project will be completed, that the proposed power plant will be sufficient to meet the Company's future needs or that further funding in addition to the existing project finance and proposed supplemental debt facilities (which funding would be subject to negotiation) may not be available or may only be available on substantively different terms from existing facilities. Despite the Company's best efforts, the ability to meet its obligations under the PSFA or any future agreement committing the Company to use Mongolian power sources is an obligation is not necessarily within the Company's control and non-fulfilment of this requirement may result in a default under the Investment Agreement. Such default could result in termination of the Investment Agreement or damages accruing, which may have a material adverse impact on the Company and its share price.

**The Investment Agreement and the Underground Plan include a number of future covenants that may be outside of the control of the Company to perform, a breach of which could have a material adverse effect on the Company and its business.**

The Investment Agreement and the Underground Plan commit the Company to perform many obligations in respect of the development and operation of Oyu Tolgoi. While performance of many of these obligations is within the effective control of the Company, the scope of certain obligations may be open to interpretation. Further, the performance of other obligations may require co-operation from third parties or may be dependent upon circumstances that are not necessarily within the control of the Company. For example:

- Mongolian nationals must represent at least 90% of Oyu Tolgoi employees now that Commercial Production has been attained, and 50% of Oyu Tolgoi's engineers must be Mongolian nationals within five years of achieving Commercial Production (i.e. by September 2018), which targets are achieved, and increasing to 70% after ten years of achieving Commercial Production (i.e. expected after September 2023). Achieving or maintaining these targets is contingent upon the availability of a sufficient number of qualified personnel, which is not wholly within the Company's control.
- Although Oyu Tolgoi LLC has achieved Commercial Production, there is a risk that unforeseen mining or processing difficulties may be encountered that could prevent Oyu Tolgoi LLC from maintaining the required Commercial Production levels.



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- Oyu Tolgoi LLC is obligated, on a priority basis, to purchase and utilize services supplied by Mongolian citizens and/or legal entities, and equipment, raw materials, other materials and spare parts manufactured in Mongolia, to the extent such services and materials are available on a competitive time, cost, quantity and quality basis, and to give preference to Mongolian suppliers of freight and transportation services required for Oyu Tolgoi. Such services, materials and suppliers may not be available to the extent required or may be available upon commercial terms that are less advantageous than those available from other sources.
- Oyu Tolgoi LLC has community development commitments and social responsibility obligations. There is a risk that Oyu Tolgoi LLC will be unable to meet the expectations or demands of relevant community stakeholders to the extent contemplated to allow Oyu Tolgoi LLC to meet its commitments under the Investment Agreement.
- The extension of the term of the Investment Agreement is subject to a number of conditions, including the Company having demonstrated that Oyu Tolgoi has been operated in accordance with industry best practices in terms of national and community benefits, environment and health and safety practices. The inherently subjective nature of these criteria creates the risk that the Company and the Government of Mongolia may disagree as to whether the conditions for extending the term of the Investment Agreement have been met.

Despite the Company's best efforts, such provisions are not necessarily within its control and non-fulfilment of any such provision may result in a default or breach under the Investment Agreement and the Underground Plan. Such a default or breach could result in termination of the Investment Agreement and the Underground Plan or damages accruing, which may have a material adverse impact on the Company and its share price.

In addition, the Mongolian Parliament passed resolutions on December 6, 2019 mandating the Government of Mongolia to take necessary measures to ensure the benefits to Mongolia of Oyu Tolgoi, including comprehensive measures to improve the implementation of the Investment Agreement and to improve the Underground Plan.

In addition to the Investment Agreement and the Underground Plan, the Company is party to a number of other material contractual agreements with a number of third parties, including the Government of Mongolia and Rio Tinto. Should the Company breach any of these agreements, it could face consequences that could have an adverse effect on its share price and/or the operations of Oyu Tolgoi, the Company's main asset. Rio Tinto, as the Company's majority shareholder and as manager of Oyu Tolgoi, could materially affect the business of the Company if it were to claim damages for a breach of an agreement against the Company or require specific performance of an obligation that the Company is unable to comply with.

**Public health crises, including the COVID-19, could adversely affect the Company's business.**

The Company's business, operations and financial condition could be materially adversely affected by the outbreak of epidemics or pandemics or other health crises.

For example, in late December 2019, a novel coronavirus (nCoV or COVID-19) was identified originating in the Wuhan Province of China, subsequently spread worldwide, with infections being reported globally and on March 11, 2020, the World Health Organization declared it could be characterized as a pandemic. Since January, the movement of goods and people within Mongolia has been restricted within and across its borders to prevent the spreading of COVID-19. In addition, following the first positive test for COVID-19 in Mongolia on March 10, 2020, the Government of Mongolia increased its restrictions on flights in and out of the country and on the movement of goods and people within and across its borders. On March 16, 2020 the Company announced there would be a slowdown on the underground project, the full impact of which is currently unknown. Further spreading of the infection could impact vendors, suppliers, construction companies and other counterparties and materially impact the ability of the Oyu Tolgoi team to advance the project.

The extent to which COVID-19 impacts the Company's business, including its operations and the market for its securities, will depend on future developments, which are highly uncertain and cannot be predicted at this time, and include the duration, severity and scope of the outbreak and the actions taken to contain or treat the

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coronavirus outbreak. In particular, the continued spread of the coronavirus globally could materially and adversely impact the Company's business and the Oyu Tolgoi mine could also experience a slowdown or temporary suspension in operations. The risks to our business include without limitation, the risk of breach of material contracts and customer agreements, employee health, workforce productivity, increased insurance premiums, limitations on travel, the availability of industry experts and personnel, prolonged restrictive measures put in place in order to control an outbreak of contagious disease or other adverse public health developments in Mongolia or any of our markets and other factors that will depend on future developments beyond the Company's control, which may have a material and adverse effect on the our business, financial condition and results of operations.

There can be no assurance that the Company's personnel will not ultimately see its workforce productivity reduced or that the Company will not incur increased medical costs / insurance premiums as a result of these health risks. Under the circumstances the Company may be forced to declare force majeure on certain contracts. In addition, the coronavirus pandemic could adversely affect global economies and financial markets resulting in an economic downturn that could have an adverse effect on the demand for base metals and our future prospects. The Company continues to monitor the situation and the impact COVID-19 may have on its business.

**The Company may be subject to public allegations, regulatory investigations or litigation that could materially and adversely affect the Company's business.**

The Company at one time conducted exploration and mining operations in a number of jurisdictions and, as a result of such activities and operations or current or future activities and operations, including, without limitation, jurisdictions subject to various sanctions regimes, may be subject to governmental or regulatory investigations and claims in or regarding those jurisdictions, including jurisdictions in which it is not currently active. A serious allegation, formal investigation by regulatory authorities or other legal claim (in each case, regardless of the ultimate decision) could have a material adverse impact on the Company, its reputation and its share price.

All industries, including the mining industry, are subject to legal claims, with and without merit. The Company may be required to defend against any such public allegations, regulatory investigations or other claims that are asserted against it, or may deem it necessary or advisable to initiate legal proceedings to protect its rights. The expense and distraction of any such public allegations, regulatory investigations or other claims or proceedings, even with respect to claims that have no merit and whether or not resolved in the Company's favour, could materially and adversely affect its business, operating results, and financial condition. There may also be considerable cost and disruption in responding to allegations, investigations or claims and taking any remedial action. Further, if an investigation, claim or proceeding were resolved against the Company or if it were to settle any such dispute, the Company may be required to pay damages and costs or refrain from certain activities, any of which could have a material adverse impact on the Company's business, operating results, and financial condition.

**The Company is subject to anti-corruption legislation.**

The Company is subject to the United States' Foreign Corrupt Practices Act and other similar legislation, such as, but not necessarily limited to, Canada's Corruption of Foreign Public Officials Act (collectively, "Anti-Corruption Legislation"), which prohibits the Company or any director, officer, employee, consultant or agent of the Company or any shareholder of the Company acting on its behalf from giving, paying, offering to give or pay, or authorizing the giving or payment of any reward, advantage, benefit or anything of value to any foreign government or public official, government staff member, political party, or political candidate in an attempt to obtain or retain business, obtain an advantage in the course of business, or to otherwise induce or influence a person working in an official capacity. The Anti-Corruption Legislation also requires public companies to make and keep books and records that accurately and fairly reflect their transactions and to devise and maintain an adequate system of internal accounting controls. The Company's international activities create the risk of unauthorized payments or offers of payments by its directors, officers, employees, consultants or agents, even though they may not always be subject to its control. The Company strictly prohibits these practices by its directors, officers, employees, consultants and agents. However, the Company's existing safeguards and any future improvements may prove to be less than effective, and its directors, officers, employees, consultants or

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agents may engage, and may previously have engaged, in conduct for which the Company might be held responsible. Any failure by the Company to adopt appropriate compliance procedures and ensure that its directors, officers, employees, consultants and agents comply with the Anti-Corruption Legislation and applicable laws and regulations in foreign jurisdictions could result in substantial penalties or restrictions on its ability to conduct its business, which may have a material adverse impact on the Company and its share price.

### **Mining projects are sensitive to the volatility of metal prices.**

The long-term viability of Oyu Tolgoi depends in large part on the world market prices of copper, gold and silver. The market prices for these metals are volatile and are affected by numerous factors beyond the Company's control. These factors include international economic and political trends, expectations of inflation, global and regional demand, currency exchange fluctuations, interest rates and global or regional consumption patterns, speculative activities, increased production due to improved mining and production methods and economic events, including the performance of Asia's economies. Ongoing worldwide economic uncertainty could lead to prolonged recessions in many markets which may, in turn, result in reduced demand for commodities, including base and precious metals. It is anticipated that there will be continued volatility in metal prices.

The aggregate effect of these factors on metal prices in the medium or long term is impossible to predict. Should prevailing metal prices be depressed or below variable production costs of the Company's current and planned mining operations for an extended period, losses may be sustained and, under certain circumstances, there may be a curtailment or suspension of some or all of the Company's mining, development and exploration activities. The Company would also have to assess the economic impact of any sustained lower metal prices on recoverability and, therefore, the cut-off grade and level of the Company's reserves and resources. These factors could have an adverse impact on the Company's future cash flows, earnings, results of operations, stated reserves and financial condition, which may have a material adverse impact on the Company and its share price.

The following table sets forth for the periods indicated: (i) the London Metals Exchange's high, low and average settlement prices for copper in U.S. dollars per pound; (ii) the high, low and average London afternoon fixing prices for gold in U.S. dollars per ounce; and (iii) the high, low and average London afternoon fixing prices for silver in U.S. dollars per ounce.

Year	Copper			Gold			Silver		
	High	Low	Average	High	Low	Average	High	Low	Average
2014 .....	\$3.37	\$2.84	\$3.10	\$1,385	\$1,142	\$1,266	\$22.05	\$15.28	\$19.08
2015 .....	\$2.94	\$2.04	\$2.49	\$1,296	\$1,049	\$1,160	\$18.36	\$13.67	\$15.66
2016 .....	\$2.69	\$1.96	\$2.21	\$1,366	\$1,077	\$1,251	\$20.71	\$13.58	\$17.16
2017 .....	\$3.27	\$2.48	\$2.80	\$1,346	\$1,151	\$1,257	\$18.56	\$15.22	\$17.05
2018 .....	\$3.29	\$2.64	\$2.96	\$1,355	\$1,178	\$1,268	\$17.52	\$13.97	\$15.71
2019	\$2.98	\$2.55	\$2.73	\$1,546	\$1,269	\$1,393	\$19.30	\$14.38	\$16.21
2020 <sup>(1)</sup>	\$2.86	\$2.20	\$2.62	\$1,684	\$1,488	\$1,584	\$18.78	\$12.42	\$17.46

<sup>(1)</sup> Note: this data represents the period from January 1, 2020 to March 18, 2020.

### **There is no guarantee that any exploration or development activity will result in additional commercial production.**

Development of a mineral property is contingent upon obtaining satisfactory exploration results. Mineral exploration and development involves substantial expenses and a high degree of risk, which even a combination of experience, knowledge and careful evaluation may not be able to adequately mitigate. There is no assurance that additional commercial quantities of ore will be discovered on any of the Company's properties, including Hugo North Lift 2, Hugo South and Heruga. There is also no assurance that, even if commercial quantities of ore are discovered, a mineral property will be brought into commercial production. The discovery of mineral deposits is dependent upon a number of factors, not the least of which is the technical skill of the exploration personnel involved. The commercial viability of a mineral deposit, once discovered, is also dependent upon a

number of factors, some of which are the particular attributes of the deposit, such as size, grade and proximity to infrastructure, metal prices and government regulations, including regulations relating to royalties, allowable production, importing and exporting of minerals, and environmental protection. In addition, assuming discovery of a commercial orebody, depending on the type of mining operation involved, several years can elapse from the initial phase of drilling until commercial operations are commenced. Most of the above factors are beyond the control of the Company.

**Under Mongolia's Resolution No. 175, the Government of Mongolia may seek contribution or reimbursement from Oyu Tolgoi LLC for compensation it provides to third parties adversely affected by Resolution No. 175.**

On June 8, 2011, the Government of Mongolia passed Resolution No. 175, the purpose of which is to authorize the designation of certain land areas for "State special needs" with certain defined areas in proximity to Oyu Tolgoi. These State special needs areas are to be used for infrastructure facilities for the development of Oyu Tolgoi. Most of the areas designated for State special needs are subject to existing mineral exploration and mining licenses issued by the Government of Mongolia to third parties and, in certain cases, a mineral resource has been declared and registered with the applicable governmental authorities in respect of such licenses.

In accordance with the terms of Resolution No. 175 and the Minerals Law (2006), the Government of Mongolia will be responsible for compensating third parties whose right to use and access the subject land area is adversely affected by the application of Resolution No. 175. The Minerals Law specifically encourages non-monetary compensation where the Government of Mongolia issues to such third parties a mineral exploration or mining license in land areas of which mineral resources are identified by a geological study or exploration works with state funding, if it reaches agreement with the third parties.

To the extent that agreement for non-monetary compensation are not reached with affected third parties, it is not clear at this time whether the Government of Mongolia will expect any compensation that may be payable to such third parties to be borne by Oyu Tolgoi LLC. If the Government of Mongolia seeks contribution or reimbursement from Oyu Tolgoi LLC for compensation it provides such third parties, the amount of such contribution or reimbursement is not presently quantifiable but may be significant. The description of Resolution No. 175 has been provided by Oyu Tolgoi LLC and has been relied on under Item 3 of NI 43-101 Reliance on Other Experts.

In April 2015, the Standing Committee of the Parliament of Mongolia requested the Government of Mongolia to modify Resolution No. 175 due to an alleged inconsistency between Resolution No. 175 and the Minerals Law and Land Law. Oyu Tolgoi LLC understands that the Government of Mongolia supports the validity and justification for Resolution No. 175 and that Resolution No. 175 will not be modified or revoked.

In September 2016, one of the affected third parties challenged the validity of Resolution No. 175 at an administrative court of Mongolia, and claimed that Resolution No. 175 be resolved to be "obviously illegal". The Government of Mongolia, as a defendant, attended the litigation. In June 2017, the Supreme Court of Mongolia resolved that there is no legal ground where Resolution No. 175 is deemed to be "obviously illegal." The resolution passed by the Parliament of Mongolia published on December 6, 2019 resolved nonetheless to revise Resolution No. 175 to reflect consideration of the groundwater usage conditions in the Gobi region.

**There can be no assurance that the interests held by the Company in its mining, development and exploration properties are free from defects or that material contractual arrangements between the Company and entities owned or controlled by foreign governments will not be unilaterally altered or revoked.**

The Company has investigated its rights to exploit and explore its various properties and, to the best of its knowledge, those rights are in good standing, but no assurance can be given that such rights will not be revoked, or significantly altered, to the detriment of the Company. There can also be no assurance that the Company's rights will not be challenged or impugned by third parties. The Company has also applied for rights to explore various properties, but there is no certainty that such rights, or any additional rights applied for, will be granted



on terms satisfactory to the Company or at all, which may have a material adverse impact on the Company and its share price.

**The Company is subject to substantial environmental and other regulatory requirements and such regulations are becoming more stringent. Non-compliance with such regulations, either through current or future operations or a pre-existing condition, could materially adversely affect the Company.**

All phases of the Company's operations are subject to environmental regulations in the various jurisdictions in which it operates and has operated. For example, Oyu Tolgoi is subject to a requirement to meet environmental protection obligations. The Company must complete an environmental protection plan for approval by the Government of Mongolia and complete a report prepared by an independent expert on environmental compliance every three years.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions thereunder, including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment, or remedial actions. Parties engaged in mining operations may be required to compensate those suffering loss or damage by reason of the mining activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations.

Environmental legislation is evolving in a manner which will likely require stricter standards and enforcement, increased fines and penalties for non-compliance, more stringent environmental assessments of proposed projects and a heightened degree of responsibility for companies and their directors, officers and employees. There is no assurance that future changes in environmental regulation, if any, will not adversely affect the Company's operations. Environmental hazards may exist on the properties in which the Company holds interests which are presently unknown to the Company and which have been caused by previous or existing third-party owners or operators of the properties. Government approvals and permits are also often required in connection with various aspects of the Company's operations. To the extent such approvals are required and not obtained, the Company may be delayed or prevented from proceeding with planned development or exploration of its mineral properties, which may have a material adverse impact on the Company and its share price.

Amendments to current laws, regulations and permits governing operations and activities of mining companies, or more stringent implementation thereof, could have a material adverse impact on the Company and cause increases in capital expenditures or production costs or reductions in levels of production at producing properties or require abandonment or delays in development of new mining properties, which may have a material adverse impact on the Company and its share price.

**Previous mining operations may have caused environmental damage at former mining projects of the Company, and if the Company cannot prove that such damage was caused by other operators, its indemnities and exemptions from liability may not be effective.**

The Company has received exemptions from liability from relevant governmental authorities for environmental damage caused by previous mining operations at former mining projects. There is a risk, however, that, if an environmental accident occurred at those sites, including with respect to tailings or water contamination, it may be difficult or impossible to assess the extent to which environmental damage was caused by the Company's activities or the activities of other operators. In that event, the liability exemptions could be ineffective and possibly worthless, which may have a material adverse impact on the Company and its share price.

**The Company cannot insure against all of the risks associated with mining.**

Production, development and exploration operations on mineral properties involve numerous risks and hazards, including rock bursts, slides, fires, earthquakes or other adverse environmental occurrences; industrial accidents; labour disputes; political and social instability; technical difficulties due to unusual or unexpected geological formations; failures of pit walls, shafts, head frames, and/or underground workings; and flooding and periodic interruptions due to inclement or hazardous weather conditions. These risks can result in, among other

things, damage to, and destruction of, mineral properties or production facilities; personal injury (and even loss of life); environmental damage including resulting from the presence of tailings or water contamination; delays in mining; monetary losses; and legal liability.

It is not always possible to obtain insurance (or to fully insure) against all such risks and the Company may decide not to insure against certain risks as a result of high premiums or other reasons. The occurrence of an event that is not fully covered or covered at all, by insurance, could have a material adverse effect on the Company's financial condition, results of operations and cash flows and could lead to a decline in the value of the securities of the Company. The Company does not maintain general insurance against political or environmental risks, which may have a material adverse impact on the Company and its share price.

### **Global climate change**

Global climate change could exacerbate certain of the threats facing the Company's business, including the frequency and severity of weather-related events, resource shortages, changes in rainfall and storm patterns and intensities, water shortages, rising water levels and changing temperatures which can disrupt the Company's operations, damage its infrastructure or properties, create financial risk to the business of the Company or otherwise have a material adverse effect on our results of operations, financial position or liquidity. These may result in substantial costs to respond during the event, to recover from the event and possibly to modify existing or future infrastructure requirements to prevent recurrence. Climate changes could also disrupt the operations of the Company by impacting the availability and cost of materials needed for mining operations and could increase insurance and other operating costs.

Global climate change also results in regulatory risks which vary according to the national and local requirements implemented by each jurisdiction where we are present. There continues to be a lack of consistent climate legislation, which creates economic and regulatory uncertainty. Increased public awareness and concern regarding global climate change may result in more legislative and/or regulatory requirements to reduce or mitigate the effects of greenhouse gas emissions.

### **The Company does not expect to pay dividends for the foreseeable future.**

The Company has not paid any dividends on its Common Shares to date, nor does it contemplate a declaration of payment of dividends until its operations generate sufficient excess cash flow for distribution as it anticipates that it will reinvest the majority of, if not all, future earnings, if any, in the development and growth of Oyu Tolgoi and its business generally. Therefore, investors may not receive any funds unless they sell their Common Shares, and investors may be unable to sell their Common Shares on favourable terms or at all. The Company cannot give any assurance of a positive return on investment or that investors will not lose the entire amount of their investment in Common Shares. Prospective investors seeking or needing dividend income or liquidity are discouraged from purchasing Common Shares.

### **The Company's ability to obtain dividends or other distributions from its subsidiaries may be subject to restrictions imposed by law, foreign currency exchange regulations and financing arrangements.**

The Company conducts its operations through subsidiaries. Its ability to obtain dividends or other distributions from its subsidiaries may be subject to restrictions or costs on dividends or repatriation of earnings under applicable local law, including any tax obligations, monetary transfer restrictions and foreign currency exchange regulations in the jurisdictions in which the subsidiaries operate or are incorporated. The ability of the Company's subsidiaries to pay dividends or to make other distributions to the Company is also subject to their having sufficient funds to do so. If its subsidiaries are unable to pay dividends or to make other distributions, the Company's growth may be inhibited unless it is able to obtain additional equity or debt financing on acceptable terms. In the event of a subsidiary's liquidation, the Company may lose all or a portion of its investment in that subsidiary. The Company expects to be able to rely on the terms of the Investment Agreement to pay dividends out of Mongolia, subject to certain restrictions contained in the Investment Agreement, but will be unable to do so in respect of projects that are not covered by the terms of the Investment Agreement, which may have a material adverse impact on the Company and its share price.

**There is no assurance that the Company will be capable of consistently producing positive operating cash flows, failing which capital may not at all times be available on terms acceptable to the Company or at all.**

Oyu Tolgoi LLC generated positive operating cash flows in 2019. However, there is no assurance that the Company will be capable of producing positive cash flow on a consistent basis or for a sustained period of time. For instance, a reduction or delay in orders from leading customers could have a material adverse effect upon the Company's results of operations, including operating cash flows. Such reduction or delay in orders from leading customers may be due to market, economic or competitive conditions and customers that previously accounted for significant revenue may not necessarily generate similar levels of or any revenue in any future period. The failure to obtain new customers or repeat orders from existing customers may materially affect the Company's operating results, including operating cash flows. The Company anticipates that its exposure to a group of key customers in any given fiscal year will continue for the foreseeable future. There is a risk that existing customers will elect not to do business with the Company in the future or will experience financial or other difficulties.

It is therefore possible that the Company be required to make arrangements for additional capital, whether through project debt financing or otherwise, to continue open-pit operations as currently planned or in respect of additional funding requirements for the underground mine or for the power plant.

If such additional capital is required, the Company may be required to access securities markets. Such markets throughout the world are cyclical and, over time, tend to undergo high levels of price and volume volatility, and the market price of securities of many companies, particularly those in the resource sector, can experience wide fluctuations which are not necessarily related to the operating performance, underlying asset values or prospects of such companies. Increased levels of volatility and resulting market turmoil could adversely impact the Company and its share price. In addition, in the past, following periods of volatility in the market price of a particular company's securities, securities class action litigation has often been brought against that company. The Company cannot provide assurance that similar litigation will not occur in the future with respect to it. Such litigation could result in substantial costs and a diversion of management's attention and resources, which could have a material adverse effect upon the Company's business, operating results, and financial condition.

If the Company is required to access credit markets to carry out its development objectives, the state of domestic and international credit markets and other financial systems could affect the Company's access to, and cost of, capital. If these credit markets were significantly disrupted, such disruptions could make it more difficult for the Company to obtain, or increase its cost of obtaining, capital and financing for its operations. Such capital may not be available on terms acceptable to the Company or at all, which may have a material adverse impact on the value of Oyu Tolgoi and, consequently, on the Company and its share price.

**The Company's prospects depend on its ability to attract and retain key personnel.**

Recruiting and retaining qualified personnel is critical to the Company's success. The number of persons skilled in the acquisition, development and exploration of mining properties is limited and competition for such persons is intense. The Company believes that it has been successful in recruiting the necessary personnel to meet its corporate objectives but, as the Company's business activity grows, it will require additional key financial, operational, technical, mining and management personnel, as well as additional staff on the operations side. The Company is also dependent on Rio Tinto for the secondment of skilled labour at Oyu Tolgoi, particularly in the construction and development phases. Although the Company believes that it will be successful in attracting and retaining qualified personnel, including qualified secondees on a timely basis from Rio Tinto, there can be no assurance of such success.

In addition, pursuant to the terms of the Investment Agreement, Oyu Tolgoi LLC is obligated to hire a specific number of Mongolian nationals following the achievement of Commercial Production. Among other obligations, Oyu Tolgoi LLC must use its best endeavours to ensure that 50% of its engineers are Mongolian nationals within five years of achieving Commercial Production (i.e. by September 2018), which target is achieved, and increasing to 70% after ten years of achieving Commercial Production (i.e. after September 2023) (and failure to meet these levels will result in financial penalties).

**The Company may from time to time hold substantial funds in cash, cash equivalents, loans and receivables, and other deposits and there is a risk that financial market turmoil or other extraordinary events could prevent the Company from obtaining timely access to such funds or result in the loss of such funds.**

The Company may from time to time hold substantial funds in cash, cash equivalents and other deposits, including treasury bills, money market funds, liquidity funds, bank deposits, and receivables and deposits with related parties. Management has adopted a conservative investment policy with respect to such funds, as the Company may require that these funds be used on short notice to support its business objectives. Nevertheless, there is a risk that an extraordinary event in financial markets generally or with respect to an obligor under an investment individually will occur that prevents the Company from accessing its funds. Such an event could, in the case of delayed liquidity, have a negative impact on the implementation of time sensitive business objectives that require access to such funds or such an event could, in extreme circumstances, result in the loss of some or all of such funds.

**The Company may experience cybersecurity threats, which could result in disruptions in business operations and adverse operating results.**

The Company relies on secure and adequate operations of information technology systems in the conduct of its operations. Access to and security of the information technology systems are critical to the Company's operations. To the Company's knowledge, it has not experienced any material losses relating to disruptions to its information technology systems. The Company has implemented ongoing policies, controls and practices to manage and safeguard the Company and its stakeholders from internal and external cybersecurity threats and to comply with changing legal requirements and industry practice. The Company is also dependent on Rio Tinto to manage the information technology systems of Oyu Tolgoi. Given that cyber risks cannot be fully mitigated and the evolving nature of these threats, the Company may not have the resources or technical sophistication to anticipate, prevent, or recover from cyber attacks and cannot assure that its information technology systems are fully protected from cybercrime or that the systems will not be inadvertently compromised, or without failures or defects. Disruptions to the Company's information technology systems, including, without limitation, security breaches, power loss, theft, computer viruses, cyber-attacks, natural disasters, and non-compliance by third-party service providers and inadequate levels of cybersecurity expertise and safeguards of third-party information technology service providers, may adversely affect the operations of the Company as well as present significant costs and risks including, without limitation, loss or disclosure of confidential, proprietary, personal or sensitive information and third-party data, material adverse effect on its financial performance, compliance with its contractual obligations, compliance with applicable laws, damaged reputation, remediation costs, potential litigation, regulatory enforcement proceedings and heightened regulatory scrutiny.

**The Company may be a passive foreign investment corporation (PFIC), which could have adverse U.S. federal income tax consequences to U.S. holders of Common Shares.**

Based on the scope of its past, current and projected operations, the Company does not believe that it was a PFIC for the 2019 tax year. However, the determination of the Company's PFIC status for any year is very fact-specific, and there can be no assurance in this regard for future years. If the Company is classified as a PFIC, U.S. holders of Common Shares could be subject to adverse U.S. federal income tax consequences, including increased tax liabilities and possible additional reporting requirements, which may have a material adverse impact on the Company and its share price. Shareholders should consult their own tax advisors in respect to same.

## **RELATED-PARTY TRANSACTIONS**

As at December 31, 2019, Rio Tinto's equity ownership in the Company was 50.8%, which was unchanged from December 31, 2018. The following tables present the consolidated financial statement line items within which transactions with Rio Tinto are reported.



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<b>Statements of Income</b> (Stated in \$000's of dollars)	Year Ended December 31,	
	<b>2019</b>	<b>2018</b>
Operating and corporate administration expenses:		
Cost recoveries - Turquoise Hill	\$ 710	\$ 623
Management services payment (i)	(31,041)	(30,055)
Cost recoveries - Rio Tinto (ii)	(42,836)	(40,627)
Finance income:		
Cash and cash equivalents (iii)	16,194	20,175
Receivable from Rio Tinto (iv)	64,285	119,688
Finance costs:		
Completion support fee (v)	(108,712)	(108,421)
<b>Total</b>	<b>\$ (101,400)</b>	<b>\$ (38,617)</b>

<b>Statement of Cash Flows</b> (Stated in \$000's of dollars)	Year Ended December 31,	
	<b>2019</b>	<b>2018</b>
<i>Cash generated from operating activities</i>		
Interest received (iii, iv)	\$ 58,850	\$ 72,012
Interest paid (v)	(156,814)	(11,918)
<i>Cash flows from investing activities</i>		
Receivable from related party: amounts withdrawn (iv)	1,375,000	1,270,000
Expenditures on property, plant and equipment:		
Management services payment and cost recoveries - Rio Tinto (i), (ii)	(60,828)	(61,145)

<b>Balance sheets</b> (Stated in \$000's of dollars)	December 31,	December 31,
	<b>2019</b>	<b>2018</b>
Cash and cash equivalents (iii)	\$ 210,000	\$ 741,711
Trade and other receivables	5,763	15,641
Prepaid expenses and other assets	82,808	2,928
Receivable from related party and other non-current financial assets (iv)	511,284	1,886,284
Trade and other payables:		
Management services payment - Rio Tinto (i)	(14,156)	(15,700)
Cost recoveries - Rio Tinto (ii)	(51,747)	(35,790)
<b>Total</b>	<b>\$ 743,952</b>	<b>\$ 2,595,074</b>

- (i) In accordance with the ARSHA, which was signed on June 8, 2011, and other related agreements, Turquoise Hill is required to make a management services payment to Rio Tinto equal to a percentage of all capital costs and operating costs incurred by Oyu Tolgoi LLC from March 31, 2010 onwards. After signing of the Underground Plan on May 18, 2015, the management services payment to Rio Tinto is calculated as 1.5% applied to underground development capital costs, and 3% applied to operating costs and capital related to current operations.
- (ii) Rio Tinto recovers the costs of providing general corporate support services and mine management services to Turquoise Hill. Mine management services are provided by Rio Tinto in its capacity as the manager of the Oyu Tolgoi project.
- (iii) In addition to placing cash and cash equivalents on deposit with banks or investing funds with other financial institutions, Turquoise Hill may deposit cash and cash equivalents with Rio Tinto in accordance with an agreed upon policy and strategy for the management of liquid resources. At December 31, 2019, cash equivalents deposited with wholly-owned subsidiaries of Rio Tinto totalled \$210 million, earning interest at rates equivalent to those offered by financial institutions or short-term corporate debt.

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- (iv) As part of project finance, Turquoise Hill appointed 9539549 Canada Inc., a wholly owned subsidiary of Rio Tinto, as service provider to provide post-drawdown cash management services in connection with net proceeds from the project finance facility, which were placed with 9539549 Canada Inc. and shall be returned to Turquoise Hill as required for purposes of Oyu Tolgoi underground mine development and funding. Rio Tinto International Holdings Limited, a wholly-owned subsidiary of Rio Tinto, has guaranteed the obligations of the service provider under this agreement. At December 31, 2019, amounts due from 9539549 Canada Inc. totalled \$511.3 million, earning interest at an effective annual rate of LIBOR plus 2.45%. The interest rate reflects interest receivable at LIBOR minus 0.05%; plus a benefit of 2.5% arising on amounts receivable from 9539549 Canada Inc. under the CMSA, which are net settled with the 2.5% completion support fee described in (v) below.
- (v) As part of the project finance agreements, Rio Tinto agreed to provide a guarantee, known as the completion support undertaking (CSU) in favour of the commercial banks and the export credit agencies. In consideration for providing the CSU, Turquoise Hill is required to pay Rio Tinto a fee equal to 2.5% of the amounts drawn under the facility. The annual completion support fee of 2.5% on amounts drawn under the facility is accounted for as a borrowing cost and included within interest expense and similar charges. The fee is settled net of a benefit arising on amounts receivable from 9539549 Canada Inc. under the CMSA described in (iv) above. The fee payment obligation will terminate on the date Rio Tinto's CSU obligations to the project lenders terminate.

**SELECTED QUARTERLY DATA**

The Company's interim financial statements are reported under IFRS applicable to interim financial statements, including International Accounting Standard (IAS) 34 *Interim Financial Reporting*.

(\$ in millions, except per share information)

	Quarter Ended			
	Dec-31	Sep-30	Jun-30	Mar-31
	2019	2019	2019	2019
Revenue	\$ 221.4	\$ 209.2	\$ 382.7	\$ 352.7
Income (loss) for the period	\$ 109.5	\$ 45.1	\$ (736.7)	\$ 105.2
Income (loss) attributable to owners of Turquoise Hill	\$ 113.1	\$ 71.7	\$ (446.5)	\$ 111.2
Basic and diluted income (loss) per share attributable to owners of Turquoise Hill	\$ 0.06	\$ 0.04	\$ (0.22)	\$ 0.06

	Quarter Ended			
	Dec-31	Sep-30	Jun-30	Mar-31
	2018	2018	2018	2018
Revenue	\$ 346.2	\$ 246.5	\$ 341.7	\$ 245.6
Income for the period	\$ 95.0	\$ 15.2	\$ 204.4	\$ 79.7
Income attributable to owners of Turquoise Hill	\$ 101.0	\$ 53.2	\$ 171.3	\$ 85.7
Basic and diluted income per share attributable to owners of Turquoise Hill	\$ 0.05	\$ 0.03	\$ 0.09	\$ 0.04

Factors necessary to understand general trends in the select unaudited quarterly financial information are summarized below.

Change in revenue over the periods presented has resulted mainly from variable metal prices combined with changes in sales volume. Revenue in Q4'19 and Q3'19 were lower than any of the other quarters due to the significantly lower sales volumes impacted by the lower gold and copper production as the mine transitioned to the lower grade Phase 4B ore. Revenue for the quarters ended September 30, 2018 and March 31, 2018 were broadly consistent. Revenue for the quarter ended June 30, 2018 was higher primarily due to increased concentrate sales volumes that benefitted from improved border logistics enabling inventory accumulated mainly during the quarter ended March 31, 2018 force majeure to be sold. Revenue for the three consecutive quarters ended June 30, 2019 was higher due to the increased gold revenues driven by the significant increase in gold production as Oyu Tolgoi benefitted from the processing of Phase 4A ore that contained higher gold content.

Change in income (loss) over the periods presented resulted mainly from the changes in revenue noted above and adjustments made for impairment charges and deferred tax assets. Loss for the quarter ended June 30,

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2019 was impacted by a \$0.6 billion impairment charge to the Oyu Tolgoi cash-generating unit whereby the Company assessed the recoverable amount of the Oyu Tolgoi cash-generating unit to be \$8.7 billion compared to a carrying value of \$9.3 billion, leading to an impairment charge of \$0.6 billion at June 30, 2019. Refer to note 13 within the Company's consolidated financial statements for the year ended December 31, 2019.

Income for the period in the consecutive quarters ended March 31 and June 30, 2018 and then in the quarters ended December 31, 2018, September 30, 2019 and December 31, 2019 was positively impacted by deferred tax asset recognition adjustments of \$32.4 million, \$145.3 million, \$6.2 million, \$45.0 million and \$118.1 million respectively. Conversely, income (loss) in the quarters ended September 30, 2018, March 31, 2019 and June 30, 2019 was negatively impacted by deferred tax asset de-recognition adjustments of \$8.1 million, \$25.7 million and \$252.8 million respectively. The adjustment to deferred tax assets in the quarter ended June 30, 2019 was primarily due to updated operating assumptions in mine planning during the period resulting primarily from timing of sustainable first production as well as the revised estimates of underground development capital, both of which also contributed to the \$0.6 billion impairment charge noted above.

**NON-GAAP MEASURES**

The Company presents and refers to the following non-GAAP measures, which are not defined in IFRS. A description and calculation of each measure is given below and may differ from similarly named measures provided by other issuers. These measures are presented in order to provide investors and other stakeholders with additional understanding of performance and operations at the Oyu Tolgoi mine and are not intended to be used in isolation from, or as a replacement for, measures prepared in accordance with IFRS.

**Operating cash costs**

The measure of operating cash costs excludes: depreciation and depletion; exploration and evaluation; charges for asset write-down (including write-down of materials and supplies inventory) and includes management services payments to Rio Tinto and management services payments to Turquoise Hill which are eliminated in the consolidated financial statements of the Company.

**C1 cash costs**

C1 cash costs is a metric representing the cash cost per unit of extracting and processing the Company's principal metal product, copper, to a condition in which it may be delivered to customers net of gold and silver credits from concentrates sold. This metric is provided in order to support peer group comparability and to provide investors and other stakeholders with additional information about the underlying cash costs of Oyu Tolgoi LLC and the impact of gold and silver credits on the operations' cost structure. C1 cash costs are relevant to understanding the Company's operating profitability and ability to generate cash flow. When calculating costs associated with producing a pound of copper, the Company deducts gold and silver revenue credits as the production cost is reduced by selling these products.

**All-in sustaining costs**

All-in sustaining costs (AISC) is an extended cash-based cost metric providing further information on the aggregate cash, capital and overhead outlay per unit and is intended to reflect the costs of producing the Company's principal metal product, copper, in both the short term and over the life-cycle of its operations. As a result, sustaining capital expenditure on a cash basis is included rather than depreciation. As the measure seeks to present a full cost of copper production associated with sustaining current operations, development project capital is not included. AISC allows Turquoise Hill to assess the ability of Oyu Tolgoi LLC to support sustaining capital expenditures for future production from the generation of operating cash flows.

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A reconciliation of total operating cash costs, C1 cash costs and all-in sustaining costs are provided below.

	(Three Months Ended)		(Twelve Months Ended)	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
<b><u>C1 costs (Stated in \$000's of dollars)</u></b>				
Cost of sales	175,007	187,730	742,985	777,248
<b>Cost of sales: \$/lb of copper sold</b>	<b>2.46</b>	<b>2.12</b>	<b>2.25</b>	<b>2.25</b>
Depreciation and depletion	(49,800)	(44,625)	(183,919)	(209,496)
Provision against carrying value of copper-gold concentrate	(40)	255	-	255
Change in inventory	11,618	17,910	(31,093)	983
Other operating expenses	52,415	85,118	221,493	234,072
Less:				
- Inventory (write-down) reversal	396	(11,886)	2,161	(14,286)
- Depreciation	(2,129)	(216)	(8,133)	(1,705)
Management services payment to Turquoise Hill	7,177	8,035	31,041	30,055
<b>Operating cash costs</b>	<b>194,644</b>	<b>242,321</b>	<b>774,535</b>	<b>817,126</b>
<b>Operating cash costs: \$/lb of copper produced</b>	<b>2.68</b>	<b>2.65</b>	<b>2.40</b>	<b>2.33</b>
Adjustments to operating cash costs	8,728	6,738	44,337	52,904
Less: Gold and silver revenues	(43,298)	(135,629)	(378,204)	(313,338)
<b>C1 costs (\$'000)</b>	<b>160,074</b>	<b>113,430</b>	<b>440,668</b>	<b>556,692</b>
<b>C1 costs: \$/lb of copper produced</b>	<b>2.21</b>	<b>1.24</b>	<b>1.37</b>	<b>1.59</b>
<b><u>All-in sustaining costs (Stated in \$000's of dollars)</u></b>				
Corporate administration	9,500	6,287	23,443	24,370
Asset retirement expense	(99)	1,741	6,064	6,797
Royalty expenses	12,453	20,104	64,048	70,782
Ore stockpile and stores write-down (reversal)	(396)	11,886	(2,161)	14,286
Other expenses	4,921	5,809	5,984	6,771
Sustaining cash capital including deferred stripping	28,969	24,554	133,342	90,796
<b>All-in sustaining costs (\$'000)</b>	<b>215,422</b>	<b>183,811</b>	<b>671,388</b>	<b>770,494</b>
<b>All-in sustaining costs: \$/lb of copper produced</b>	<b>2.97</b>	<b>2.01</b>	<b>2.08</b>	<b>2.20</b>

(1) Adjustments to operating cash costs include: treatment, refining and freight differential charges less the 5% Government of Mongolia royalty and other expenses not applicable to the definition of C1 cost.

## Mining costs and milling costs

Mining costs and milling costs are included within operating cash costs. Mining costs per tonne of material mined for the year ended December 31, 2019 are calculated by reference to total mining costs of \$190.2 million (2018: \$194.1 million) and total material mined of 101.3 million tonnes (2018: 91.3 million tonnes). Mining costs per tonne of material mined for the three months ended December 31, 2019 are calculated by reference to total mining costs of \$43.7 million (Q4'18: \$52.1 million) and total material mined of 28.1 million tonnes (Q4'18: 22.9 million tonnes).

Milling costs per tonne of ore treated for the year ended December 31, 2019 are calculated by reference to total milling costs of \$264.3 million (2018: \$275.2 million) and total ore treated of 40.8 million tonnes (2018: 38.7 million tonnes). Milling costs per tonne of ore treated for the three months ended December 31, 2019 are calculated by reference to total milling costs of \$55.5 million (Q4'18: \$64.1 million) and total ore treated of 11.1 million tonnes (Q4'18: 9.4 million tonnes).

## Working capital

Consolidated working capital comprises those components of current assets and liabilities which support and result from the Company's ongoing running of its current operations. It is provided in order to give a quantifiable indication of the Company's short-term cash generation ability and business efficiency. As a measure linked to current operations and the sustainability of the business, the Company's definition of working capital excludes: non-trade receivables and payables; financing items; cash and cash equivalents; deferred revenue and non-current inventory.



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A reconciliation of consolidated working capital to the financial statements and notes is provided below.

<b>Working capital</b> (Stated in \$000's of dollars)	<b>December 31, 2019</b>	<b>December 31, 2018</b>
Inventories (current)	\$ 175,719	\$ 242,970
Trade and other receivables	\$ 27,047	30,264
Trade and other payables:		
- trade payables and accrued liabilities	(389,476)	(395,883)
- payable to related parties	(65,903)	(51,490)
<b>Consolidated working capital</b>	<b>\$ (252,613)</b>	<b>\$ (174,139)</b>

**Contractual obligations**

The following section of this MD&A discloses contractual obligations in relation to the Company's lease, purchase, power and asset retirement obligations. Amounts relating to these obligations are calculated on the basis of the Company carrying out its future business activities and operations as planned at the period end. As such, contractual obligations presented in this MD&A will differ from amounts presented in the financial statements, which are prepared on the basis of minimum uncancellable commitments to pay in the event of contract termination. The MD&A presentation of contractual obligations is provided in order to give an indication of future expenditure, for the disclosed categories, arising from the Company's continuing operations and development projects.

A reconciliation of contractual obligations at December 31, 2019 to the financial statements and notes is provided below.

(Stated in \$000's of dollars)	<b>Project Finance Facility</b>	<b>Purchase obligations</b>	<b>Power commitments</b>	<b>Lease liabilities</b>	<b>Decommissioning obligations</b>
<b>Commitments (MD&amp;A)</b>	<b>\$ 4,348,918</b>	<b>\$ 769,172</b>	<b>\$ 404,283</b>	<b>\$ 21,755</b>	<b>\$ 212,633</b>
Cancellable obligations (net of exit costs)		(601,627)	(172,797)	-	-
Accrued capital expenditure		(123,089)	-	-	-
Discounting and other adjustments	(156,683)	-	-	(173)	(108,395)
<b>Financial statement amount</b>	<b>\$ 4,192,235</b>	<b>\$ 44,456</b>	<b>\$ 231,486</b>	<b>\$ 21,582</b>	<b>\$ 104,238</b>

**INTERNAL CONTROL OVER FINANCIAL REPORTING AND DISCLOSURE CONTROLS AND PROCEDURES**

Disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed by the Company under applicable securities legislation is gathered and reported to senior management, including the Company's CEO and CFO, on a timely basis so that appropriate decisions can be made regarding public disclosures.

In Q4, the Company retained a consultant to undertake a review of the design and effectiveness of its disclosure controls and procedures as such term is defined in Rules 13a – 15(e) and 15d – 15(e) of the Securities Exchange Act of 1934, as amended (the Exchange Act) and under National Instrument 52-109 – Certification of Disclosure in Issuers' Annual and Interim Filings (NI 52-109) ("DC&P") practices. The review is now complete and the consultant has reported that the Company's Disclosure Controls and Procedures were operating effectively in 2019. In addition, the Company requested and is in the process of reviewing and considering certain enhancements for implementation.

Based upon that review, the Company's CEO and CFO concluded that as of the end of the fiscal year, the Company's DC&P were effective to ensure that information required to be disclosed by the Company in reports that it files or submits under applicable U.S. and Canadian securities legislation is (i) recorded, processed,

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summarized and reported within the time periods specified in such legislation and (ii) accumulated and communicated to the Company's management, including its CEO and CFO, to allow timely decisions regarding required disclosure.

The Company's management, including the CEO and CFO, believe that any disclosure controls and procedures or internal control over financial reporting, no matter how well conceived and operated, can provide only a reasonable and not absolute assurance that the objectives of the control system are met. Further, the design of a control system reflects the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, they cannot provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been prevented or detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by unauthorized override of the control. The design of any systems of controls is also based in part on certain assumptions about the likelihood of certain events, and there can be no assurance that any design can achieve its stated goals under all potential future conditions. Accordingly, because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

## **MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Management is responsible for establishing and maintaining adequate internal controls over financial reporting of the Company (as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act and in NI 52-109). Internal controls over financial reporting are designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with IFRS and the requirements of applicable U.S. and Canadian securities legislation.

The Company's CEO and CFO have assessed the effectiveness of the Company's internal controls over financial reporting as at December 31, 2019 in accordance with Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in 2013. Based on this assessment, the Company's CEO and CFO have determined that the Company's internal controls over financial reporting were effective as of December 31, 2019 and have certified the Company's annual filings with the U.S. Securities and Exchange Commission on Form 40-F as required by the U.S. Sarbanes-Oxley Act and with Canadian securities regulatory authorities.

Management reviewed the results of management's assessment with the Audit Committee of the Company's Board of Directors. PricewaterhouseCoopers LLP, independent auditor, has been engaged to audit and provide independent opinions on the Company's consolidated financial statements and the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. PricewaterhouseCoopers LLP has expressed an unqualified opinion on the Company's consolidated financial statements and on the Company's internal control over financial reporting as of December 31, 2019.

### **Changes in internal control over financial reporting**

There were no changes in the Company's internal control over financial reporting (as such term is defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the year ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

## **AUDIT COMMITTEE OVERSIGHT**

The Audit Committee reviews, with management and the external auditors, the Company's MD&A and related consolidated financial statements and approves the release of such information to shareholders. For each audit or quarterly review, the external auditors prepare a report for members of the Audit Committee summarizing key areas, significant issues and material internal control weaknesses encountered, if any.

## **QUALIFIED PERSON**

Disclosure of information of a scientific or technical nature in this MD&A in respect of the Oyu Tolgoi mine was approved by Jo-Anne Dudley (FAusIMM(CP)), Chief Operating Officer of the Company. Jo-Anne Dudley is a "qualified person" as that term is defined in National Instrument 43-101 - *Standards of Disclosure for Mineral Projects* ("NI 43-101").

## **CAUTIONARY STATEMENTS**

### **Language regarding reserves and resources**

Readers are advised that NI 43-101 requires that each category of mineral reserves and mineral resources be reported separately. For detailed information related to Company Mineral Resources and Mineral Reserves, readers should refer to the AIF of the Company for the year ended December 31, 2018, and other continuous disclosure documents filed by the Company since January 1, 2019 under Turquoise Hill's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

### **Note to United States investors concerning estimates of measured, indicated and inferred resources.**

This document has been prepared in accordance with the requirements of Canadian securities laws, which differ from the requirements of U.S. securities laws. Unless otherwise indicated, all reserve and resource estimates included in this document have been prepared in accordance with NI 43-101, and the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for mineral resources and mineral reserves. NI 43-101 is a rule developed by the Canadian Securities Authorities that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. NI 43-101 differs significantly from the disclosure requirements of the SEC generally applicable to U.S. companies. For example, the terms "mineral reserve", "proven mineral reserve", "probable mineral reserve", "mineral resource", "measured mineral resource", "indicated mineral resource", and "inferred mineral resource" are defined in NI 43-101. These definitions differ from the definitions in the disclosure requirements promulgated by the SEC. Accordingly, information concerning mineral deposits set forth herein may not be comparable with information made public by companies that report in accordance with SEC disclosure.

## **FORWARD-LOOKING STATEMENTS AND FORWARD-LOOKING INFORMATION**

Certain statements made herein, including statements relating to matters that are not historical facts and statements of the Company's beliefs, intentions and expectations about developments, results and events which will or may occur in the future, constitute "forward-looking information" within the meaning of applicable Canadian securities legislation and "forward-looking statements" within the meaning of the "safe harbor" provisions of the United States *Private Securities Litigation Reform Act of 1995*. Forward-looking statements and information relate to future events or future performance, reflect current expectations or beliefs regarding future events and are typically identified by words such as "anticipate", "could", "should", "expect", "seek", "may", "intend", "likely", "plan", "estimate", "will", "believe" and similar expressions suggesting future outcomes or statements regarding an outlook. These include, but are not limited to, information regarding the timing and amount of production and potential production delays, statements in respect of the impacts of any delays on the Company's cash flows, expected copper and gold grades, liquidity, funding requirements and planning, statements regarding timing and status of underground development, the development options under consideration for the design of Panel 0 and the related cost and schedule implications, timing and status of the Tavan Tolgoi-based power project, the expectations set out in the Tavan Tolgoi Power Plant Feasibility Study, the potential impact of COVID-19 on the Company's business, operations and financial condition, capital and operating cost estimates, timing of completion of the definitive estimate review, mill and concentrator throughput, the initiation of formal international arbitration proceedings, anticipated business activities, planned expenditures, corporate strategies, and other statements that are not historical facts.

Forward-looking statements and information are made based upon certain assumptions and other important factors that, if untrue, could cause the actual results, performance or achievements of the Company to be

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materially different from future results, performance or achievements expressed or implied by such statements or information. There can be no assurance that such statements or information will prove to be accurate. Such statements and information are based on numerous assumptions regarding present and future business strategies, local and global economic conditions, and the environment in which the Company will operate in the future, including the price of copper, gold and silver and projected gold, copper and silver grades, anticipated capital and operating costs, anticipated future production and cash flows, the anticipated location of certain infrastructure and sequence of mining in Panel O, the availability and timing of required governmental and other approvals for the construction of the Tavan Tolgoi Power Plant, the status of the Company's relationship and interaction with the Government of Mongolia on the continued operation and development of Oyu Tolgoi and Oyu Tolgoi LLC internal governance. Certain important factors that could cause actual results, performance or achievements to differ materially from those in the forward-looking statements and information include, among others, copper; gold and silver price volatility; discrepancies between actual and estimated production, mineral reserves and resources and metallurgical recoveries; development plans for processing resources; the outcome of the definitive estimate review; public health crises such as COVID-19; matters relating to proposed exploration or expansion; mining operational and development risks, including geotechnical risks and ground conditions; litigation risks; regulatory restrictions (including environmental regulatory restrictions and liability); Oyu Tolgoi LLC's ability to deliver a domestic power source for the Oyu Tolgoi project within the required contractual time frame; communications with local stakeholders and community relations; activities, actions or assessments, including tax assessments, by governmental authorities; events or circumstances (including strikes, blockages or similar events outside of the Company's control) that may affect the Company's ability to deliver its products in a timely manner; currency fluctuations; the speculative nature of mineral exploration; the global economic climate; dilution; share price volatility; competition; loss of key employees; cyber security incidents; additional funding requirements, including in respect of the development or construction of a long-term domestic power supply for the Oyu Tolgoi project; capital and operating costs, including with respect to the development of additional deposits and processing facilities; and defective title to mineral claims or property. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements and information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. All such forward-looking statements and information are based on certain assumptions and analyses made by the Company's management in light of their experience and perception of historical trends, current conditions and expected future developments, as well as other factors management believes are appropriate in the circumstances. These statements, however, are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements or information.

With respect to specific forward-looking information concerning the continued operation and development of Oyu Tolgoi, the Company has based its assumptions and analyses on certain factors which are inherently uncertain. Uncertainties and assumptions include, among others: the timing and cost of the construction and expansion of mining and processing facilities; the timing and availability of a long-term domestic power source (or the availability of financing for the Company to construct such a source) for Oyu Tolgoi; the ability to secure and draw down on the supplemental debt under the Oyu Tolgoi project financing facility and the availability of additional financing on terms reasonably acceptable to Oyu Tolgoi LLC, Rio Tinto and the Company to further develop Oyu Tolgoi; the potential impact of COVID-19; the impact of changes in, changes in interpretation to or changes in enforcement of, laws, regulations and government practices in Mongolia; the availability and cost of skilled labour and transportation; the obtaining of (and the terms and timing of obtaining) necessary environmental and other government approvals, consents and permits; delays, and the costs which would result from delays, in the development of the underground mine (which could significantly exceed the costs projected in the 2016 Oyu Tolgoi Feasibility Study and the 2016 Oyu Tolgoi Technical Report); projected copper, gold and silver prices and their market demand; and production estimates and the anticipated yearly production of copper, gold and silver at Oyu Tolgoi.

The cost, timing and complexities of mine construction and development are increased by the remote location of a property such as Oyu Tolgoi. It is common in mining operations and in the development or expansion of existing facilities to experience unexpected problems and delays during development, construction and mine start-up. Additionally, although Oyu Tolgoi has achieved commercial production, there is no assurance that future development activities will result in profitable mining operations.



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This MD&A also contains references to estimates of mineral reserves and mineral resources. The estimation of reserves and resources is inherently uncertain and involves subjective judgments about many relevant factors. The mineral resource estimates contained in this MD&A are exclusive of mineral reserves. Further, mineral resources that are not mineral reserves do not have demonstrated economic viability. The accuracy of any such estimates is a function of the quantity and quality of available data, and of the assumptions made and judgments used in engineering and geological interpretation (including future production from Oyu Tolgoi, the anticipated tonnages and grades that will be achieved or the indicated level of recovery that will be realized), which may prove to be unreliable. There can be no assurance that these estimates will be accurate or that such mineral reserves and mineral resources can be mined or processed profitably. See the discussion under the headings "Language regarding reserves and resources" and "Note to United States investors concerning estimates of measured, indicated and inferred resources" in the section titled CAUTIONARY STATEMENTS – of this MD&A. Such estimates are, in large part, based on the following:

- Interpretations of geological data obtained from drill holes and other sampling techniques. Large scale mineral continuity and character of the deposits can be improved with additional drilling and sampling; actual mineralization or formations may be different from those predicted. It may also take many years from the initial phase of drilling before production is possible, and during that time the economic feasibility of exploiting a deposit may change. Reserve and resource estimates are materially dependent on prevailing metal prices and the cost of recovering and processing minerals at the individual mine sites. Market fluctuations in the price of metals or increases in the costs to recover metals or the actual recovery percentage of the metal(s) from the Company's mining projects may render mining of mineral reserves uneconomic and affect the Company's operations in a materially adverse manner. Moreover, various short-term operating factors may cause a mining operation to be unprofitable in any particular accounting period;
- Assumptions relating to commodity prices and exchange rates during the expected life of production, mineralization of the area to be mined, the projected cost of mining, and the results of additional planned development work. Actual future production rates and amounts, revenues, taxes, operating expenses, environmental and regulatory compliance expenditures, development expenditures, and recovery rates may vary substantially from those assumed in the estimates. Any significant change in these assumptions, including changes that result from variances between projected and actual results, could result in material downward revision to current estimates;
- Assumptions relating to projected future metal prices. The Company uses prices reflecting market pricing projections in the financial modeling for Oyu Tolgoi which are subjective in nature. It should be expected that actual prices will be different than the prices used for such modeling (either higher or lower), and the differences could be significant; and
- Assumptions relating to the costs and availability of treatment and refining services for the metals mined from Oyu Tolgoi, which require arrangements with third parties and involve the potential for fluctuating costs to transport the metals and fluctuating costs and availability of refining services. These costs can be significantly impacted by a variety of industry-specific as well as regional and global economic factors (including, among others, those which affect commodity prices). Many of these factors are beyond the Company's control.

Readers are cautioned not to place undue reliance on forward-looking information or statements. By their nature, forward-looking statements involve numerous assumptions, inherent risks and uncertainties, both general and specific, which contribute to the possibility that the predicted outcomes will not occur. Events or circumstances could cause the Company's actual results to differ materially from those estimated or projected and expressed in, or implied by, these forward-looking statements. Important factors that could cause actual results to differ from these forward-looking statements are included in the "Risks and Uncertainties" section in this MD&A.

Readers are further cautioned that the list of factors enumerated in the "Risks and Uncertainties" section of this MD&A that may affect future results is not exhaustive. When relying on the Company's forward-looking statements and information to make decisions with respect to the Company, investors and others should

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carefully consider the foregoing factors and other uncertainties and potential events. Furthermore, the forward-looking statements and information contained in this MD&A are made as of the date of this document and the Company does not undertake any obligation to update or to revise any of the included forward-looking statements or information, whether as a result of new information, future events or otherwise, except as required by applicable law. The forward-looking statements and information contained in this MD&A are expressly qualified by this cautionary statement.

**MANAGEMENT'S REPORT TO SHAREHOLDERS**

The consolidated financial statements and management's discussion and analysis of financial condition and results of operations (MD&A) are the responsibility of the management of Turquoise Hill. The financial statements and the MD&A have been prepared by management in accordance with IFRS and regulatory requirements, respectively, using management's best estimates and judgment of all information available up to March 20, 2020.

The Board of Directors has approved the information contained in the consolidated financial statements and the MD&A. The Board of Directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal controls. The Audit Committee of the Board of Directors, consisting solely of outside directors, meets regularly during the year with financial officers of the Company and the external auditors to satisfy itself that management is properly discharging its financial reporting responsibilities to the Directors who approve the consolidated financial statements.

The financial statements have, in management's opinion, been properly prepared within reasonable limits of materiality and within the framework of the accounting policies summarized in Note 2 to the consolidated financial statements.

The consolidated financial statements have been audited by PricewaterhouseCoopers LLP, independent auditor, in accordance with the standards of the Public Company Accounting Oversight Board (United States). They have full and unrestricted access to the Audit Committee.

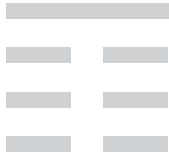
/s/ Ulf Quellmann

Ulf Quellmann  
Chief Executive Officer

March 20, 2020  
Montreal, QC, Canada

/s/ Luke Colton

Luke Colton  
Chief Financial Officer



# **Turquoise Hill Resources Ltd.**

## **Consolidated Financial Statements**

**December 31, 2019 and 2018**



## Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of Turquoise Hill Resources Ltd.

### *Opinions on the Financial Statements and Internal Control over Financial Reporting*

We have audited the accompanying consolidated balance sheets of Turquoise Hill Resources Ltd. and its subsidiaries (together, the Company) as of December 31, 2019 and 2018, and the related consolidated statements of income (loss), comprehensive income (loss), cash flows, and equity for the years then ended, including the related notes (collectively referred to as the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and its financial performance and its cash flows for the years then ended in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

### *Basis for Opinions*

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting in Section 17 of Management's Discussion and Analysis of Financial Condition and Results of Operations. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal

*PricewaterhouseCoopers LLP*

*PricewaterhouseCoopers Place, 250 Howe Street, Suite 1400, Vancouver, British Columbia, Canada V6C 3S7*

*T: +1 604 806 7000, F: +1 604 806 7806*

"PwC" refers to PricewaterhouseCoopers LLP, an Ontario limited liability partnership.





control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

#### *Definition and Limitations of Internal Control over Financial Reporting*

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

#### *Critical Audit Matters*

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgements. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

#### *Recoverable amount of the Oyu Tolgoi mine CGU*

As described in Notes 2 and 13 to the consolidated financial statements, property, plant and equipment is tested for impairment when events or changes in circumstances indicate that the carrying value may be higher than its recoverable amount. The net book value of the property, plant and equipment related to the Oyu Tolgoi mine as of December 31, 2019 was \$9,783 million. Impairment is assessed at the level of a cash-generating unit ("CGU"), which is identified as the smallest identifiable group of assets capable of generating cash inflows which are largely independent of the cash inflows from other assets. Management considers both internal and external information to determine whether there is an indicator of impairment. As of June 30, 2019, management determined that impairment indicators existed for the property, plant and equipment of the Oyu Tolgoi mine CGU, and as of December 31, 2019, management



determined that impairment indicators and impairment reversal indicators existed for those assets. Accordingly, as of both of the above dates, an impairment assessment of the Oyu Tolgoi mine CGU was undertaken. Under both assessments, management determined the recoverable amounts as fair value less costs of disposal of the Oyu Tolgoi mine CGU using discounted cash flows models. As of June 30, 2019, the recoverable amount was lower than the carrying value of the Oyu Tolgoi mine CGU, and an impairment charge of \$597 million was recorded. As of December 31, 2019, the recoverable amount approximated the carrying value of the Oyu Tolgoi mine CGU, and no further impairment charge or reversal of the previously recognized impairment charge was recorded. Management used significant assumptions in preparing the discounted cash flow models, which included: long-term commodity prices, discount rates, reserves and resources, operating costs, development capital, and scheduling and mine design. Management estimates reserves and resources based on information compiled and reviewed by management's specialists.

The principal considerations for our determination that performing procedures relating to the recoverable amount of the Oyu Tolgoi mine CGU is a critical audit matter are i) significant estimates are required by management to determine the recoverable amount of the Oyu Tolgoi mine CGU, ii) management's specialists compiled and reviewed information used in the preparation of reserves and resources and scheduling and mine design, and iii) significant audit effort and a high degree of auditor judgement was required in performing procedures related to management's discounted cash flow model as of December 31, 2019 and the significant assumptions therein, including: long-term commodity prices, discount rate, reserves and resources, operating costs, development capital, and scheduling and mine design. In addition, our audit effort included the involvement of professionals with specialized skills and knowledge to assist in evaluating the discount rate.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the determination of the recoverable amount for the Oyu Tolgoi mine CGU. These procedures also included, among others, testing management's process for determining the recoverable amount of the Oyu Tolgoi mine CGU as of December 31, 2019, evaluating the appropriateness of the discounted cash flow model, testing the completeness, accuracy, and relevance of underlying data and evaluating the reasonability of the significant assumptions used therein. Evaluating management's assumptions involved assessing whether the assumptions used by management were reasonable by considering: the consistency of long-term commodity prices with external market and industry data, and the consistency of the operating costs and development capital with current and past results. Evaluating the reasonableness of the reserves and resources and scheduling and mine design involved considering the qualifications and objectivity of management's specialists, obtaining an understanding of the work performed, including the methods and assumptions used by management's specialists, testing data on a sample basis, and evaluating their findings. Professionals with specialized skills and knowledge provided assistance in testing the discount rate.

#### *Recoverability of deferred tax assets in Mongolia*

As described in Notes 2 and 16 to the consolidated financial statements, the Company recognized deferred tax assets of \$494 million in Mongolia as of December 31, 2019. Deferred tax assets are recognized for unused tax losses and deductible temporary differences only to the extent that it is probable that future



taxable income will be available against which they can be utilized. Management used significant assumptions in estimating future taxable income, which included: long-term commodity prices, reserves and resources, operating costs, financing costs, development capital, and scheduling and mine design. Management estimates reserves and resources based on information compiled and reviewed by management's specialists.

The principal considerations for our determination that performing procedures relating to recoverability of deferred tax assets in Mongolia is a critical audit matter are i) significant estimates are required by management in the development of assumptions used by management to estimate future taxable income which supports the recoverability of deferred tax assets, ii) management's specialists compiled and reviewed information used in the preparation of reserves and resources and scheduling and mine design, and iii) significant audit effort and a high degree of auditor judgement was required in performing procedures to evaluate future taxable income and the significant assumptions therein, including: long-term commodity prices, reserves and resources, operating costs, financing costs, development capital, and scheduling and mine design.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the recoverability of deferred tax assets in Mongolia, including controls over the estimate of future taxable income. These procedures also included, among others, testing management's process for estimating future taxable income, testing the completeness, accuracy, and relevance of underlying data, and evaluating the reasonableness of the significant assumptions used by management. Evaluating management's assumptions involved assessing whether the assumptions used by management were reasonable by considering: the consistency of long-term commodity prices with external market and industry data, and the consistency of the operating costs, financing costs, and development capital with current and past results. Evaluating the reasonableness of the reserves and resources and scheduling and mine design involved considering the qualifications and objectivity of management's specialists, obtaining an understanding of the work performed, including the methods and assumptions used by management's specialists, testing data on a sample basis, and evaluating their findings.

#### *Going concern assessment*

As described in Notes 1 and 2 to the consolidated financial statements, the Company has to fund current operations and underground development, including progression of a Tavan Tolgoi-based power plant. As of December 31, 2019, the Company had \$2.2 billion of available liquidity, split between remaining project finance proceeds of \$0.5 billion, which are drawn and currently deposited with a related party, and \$1.7 billion of cash and cash equivalents. The Company's current assets exceeded current liabilities by \$1.9 billion as of December 31, 2019. Management believes that it has enough liquidity to meet its minimum obligations for a period of at least 12 months from December 31, 2019, and as such have concluded that there are no material uncertainties related to events or conditions that may cast significant doubt upon the Company's ability to continue as a going concern. In making such determination, management prepared a short-term cash flow forecast. Management used significant assumptions in preparing the short-term cash flow forecast, which included: short-term commodity prices, reserves, operating costs, financing costs, and



development capital. Management estimates reserves based on information compiled and reviewed by management's specialists.

The principal considerations for our determination that performing procedures relating to the going concern assessment is a critical audit matter are i) significant estimates are required by management when preparing the short-term cash flow forecast, ii) management's specialists compiled and reviewed information used in the preparation of reserves, and iii) significant audit effort and a high degree of auditor judgement was required in performing procedures to evaluate management's short-term cash flow forecast and the significant assumptions therein, including: short-term commodity prices, reserves, operating costs, financing costs, and development capital.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the going concern assessment. These procedures also included, among others, testing management's process for preparing the short-term cash flow forecast, testing the completeness, accuracy, and relevance of underlying data and evaluating the reasonability of the significant assumptions used in the short-term cash flow forecast. Evaluating management's assumptions involved evaluating whether the assumptions used by management were reasonable by considering: the consistency of short-term commodity prices with external market and industry data, and the consistency of the operating costs, financing costs and development capital with current and past results. Evaluating the reasonableness of the reserves involved considering the qualifications and objectivity of management's specialists, obtaining an understanding of the work performed, including the methods and assumptions used by management's specialists, testing data on a sample basis, and evaluating their findings.

/s/ PricewaterhouseCoopers LLP

Chartered Professional Accountants

Vancouver, Canada  
March 20, 2020

We have served as the Company's auditor since 2012.



**TURQUOISE HILL RESOURCES LTD.**  
**Consolidated Statements of Income (Loss)**  
(Stated in thousands of U.S. dollars)

	Note	Year Ended December 31,	
		2019	2018
Revenue	4	\$ 1,166,014	\$ 1,180,022
Cost of sales	5	(742,985)	(777,248)
<b>Gross margin</b>		<b>423,029</b>	<b>402,774</b>
Operating expenses	6	(221,493)	(234,072)
Corporate administration expenses		(23,443)	(24,370)
Other income		2,714	7,119
Impairment charges	13	(596,906)	-
<b>Income (loss) before finance items and taxes</b>		<b>(416,099)</b>	<b>151,451</b>
<b>Finance items</b>			
Finance income	7	106,335	154,668
Finance costs	7	(10,021)	(52,489)
		<b>96,314</b>	<b>102,179</b>
<b>Income (loss) from operations before taxes</b>		<b>\$ (319,785)</b>	<b>\$ 253,630</b>
Income and other taxes	16	(157,133)	140,644
<b>Income (loss) for the year</b>		<b>\$ (476,918)</b>	<b>\$ 394,274</b>
Attributable to owners of Turquoise Hill Resources Ltd.		(150,457)	411,198
Attributable to owner of non-controlling interest		(326,461)	(16,924)
<b>Income (loss) for the year</b>		<b>\$ (476,918)</b>	<b>\$ 394,274</b>
<b>Basic and diluted earnings (loss) per share attributable to Turquoise Hill Resources Ltd.</b>	21	<b>\$ (0.07)</b>	<b>\$ 0.20</b>
Basic weighted average number of shares outstanding (000's)		<b>2,012,314</b>	<b>2,012,314</b>

The accompanying notes are an integral part of these consolidated financial statements.

**TURQUOISE HILL RESOURCES LTD.**  
**Consolidated Statements of Comprehensive Income (Loss)**  
(Stated in thousands of U.S. dollars)

	Year Ended December 31,	
	<b>2019</b>	2018
<b>Income (loss) for the year</b>	<b>\$ (476,918)</b>	<b>\$ 394,274</b>
<b>Other comprehensive loss:</b>		
Items that will not be reclassified to income:		
Changes in the fair value of marketable securities at FVOCI	<b>(1,657)</b>	(2,875)
<b>Other comprehensive loss for the year (a)</b>	<b>\$ (1,657)</b>	<b>\$ (2,875)</b>
<b>Total comprehensive income (loss) for the year</b>	<b>\$ (478,575)</b>	<b>\$ 391,399</b>
Attributable to owners of Turquoise Hill	<b>(152,114)</b>	408,323
Attributable to owner of non-controlling interest	<b>(326,461)</b>	(16,924)
<b>Total comprehensive income (loss) for the year</b>	<b>\$ (478,575)</b>	<b>\$ 391,399</b>

(a) No tax charges and credits arose on items recognized as other comprehensive income or loss in 2019 (2018: nil).

The accompanying notes are an integral part of these consolidated financial statements.

# TURQUOISE HILL RESOURCES LTD.

## Consolidated Statements of Cash Flows

(Stated in thousands of U.S. dollars)

	Note	Year Ended December 31,	
		2019	2018
<b>Cash generated from operating activities before interest and tax</b>	20	\$ 341,730	\$ 363,006
Interest received		84,080	88,267
Interest paid		(427,464)	(261,431)
Income and other taxes paid		(9,998)	(9,874)
<b>Net cash generated from (used in) operating activities</b>		\$ (11,652)	\$ 179,968
<b>Cash flows from investing activities</b>			
Receivable from related party: amounts withdrawn	22	1,375,000	1,270,000
Expenditures on property, plant and equipment		(1,308,073)	(1,304,347)
Other investing cash flows		-	616
<b>Cash generated from (used in) investing activities</b>		\$ 66,927	\$ (33,731)
<b>Cash flows from financing activities</b>			
Net proceeds of project finance facility	15	1,511	13,261
Payment of project finance fees		(107)	(363)
Payment of lease liability		(7,892)	-
<b>Cash generated from (used in) financing activities</b>		\$ (6,488)	\$ 12,898
Effects of exchange rates on cash and cash equivalents		131	(851)
<b>Net increase in cash and cash equivalents</b>		\$ 48,918	\$ 158,284
Cash and cash equivalents - beginning of year		\$ 1,603,067	\$ 1,444,783
Cash and cash equivalents - end of year		1,651,985	1,603,067
<b>Cash and cash equivalents as presented on the balance sheets</b>		\$ 1,651,985	\$ 1,603,067

The accompanying notes are an integral part of these consolidated financial statements.

# TURQUOISE HILL RESOURCES LTD.

## Consolidated Balance Sheets

(Stated in thousands of U.S. dollars)

	Note	December 31, 2019	December 31, 2018
<b>Current assets</b>			
Cash and cash equivalents	8	\$ 1,651,985	\$ 1,603,067
Inventories	9	175,719	242,970
Trade and other receivables	10	27,047	30,264
Prepaid expenses and other assets	11	99,671	30,213
Receivable from related party	12	511,284	1,620,073
		<b>2,465,706</b>	<b>3,526,587</b>
<b>Non-current assets</b>			
Property, plant and equipment	13	9,782,647	8,838,305
Inventories	9	28,985	18,655
Deferred income tax assets	16	534,078	649,421
Receivable from related party and other financial assets	12	10,978	279,019
		<b>10,356,688</b>	<b>9,785,400</b>
<b>Total assets</b>		<b>\$12,822,394</b>	<b>\$ 13,311,987</b>
<b>Current liabilities</b>			
Borrowings and other financial liabilities	15	\$ 26,547	\$ -
Trade and other payables	14	466,206	459,244
Deferred revenue		27,896	75,162
		<b>520,649</b>	<b>534,406</b>
<b>Non-current liabilities</b>			
Borrowings and other financial liabilities	15	4,187,270	4,187,297
Deferred income tax liabilities	16	79,180	47,934
Decommissioning obligations	17	104,238	131,565
		<b>4,370,688</b>	<b>4,366,796</b>
<b>Total liabilities</b>		<b>\$ 4,891,337</b>	<b>\$ 4,901,202</b>
<b>Equity</b>			
Share capital	18	\$11,432,122	\$ 11,432,122
Contributed surplus		1,558,811	1,558,264
Accumulated other comprehensive income		(813)	844
Deficit		(3,821,889)	(3,670,310)
<b>Equity attributable to owners of Turquoise Hill</b>		<b>9,168,231</b>	<b>9,320,920</b>
Attributable to non-controlling interest	19	(1,237,174)	(910,135)
<b>Total equity</b>		<b>\$ 7,931,057</b>	<b>\$ 8,410,785</b>
<b>Total liabilities and equity</b>		<b>\$12,822,394</b>	<b>\$ 13,311,987</b>

Commitments and contingencies (Note 23)  
Subsequent events (Notes 23 and 26)

The accompanying notes are an integral part of these consolidated financial statements.

The financial statements were approved by the directors on March 20, 2020 and signed on their behalf by:

/s/ P. Gillin

P. Gillin, Director

/s/ R. Robertson

R. Robertson, Director



# TURQUOISE HILL RESOURCES LTD.

## Consolidated Statements of Equity

(Stated in thousands of U.S. dollars)

Year Ended December 31, 2019	Attributable to owners of Turquoise Hill						
	Share capital	Contributed surplus	Accumulated other comprehensive income (loss)	Deficit	Total	Non-controlling Interest (Note 19)	Total equity
<b>Opening balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,264</b>	<b>\$ 844</b>	<b>\$ (3,670,310)</b>	<b>\$ 9,320,920</b>	<b>\$ (910,135)</b>	<b>\$ 8,410,785</b>
Impact of change in accounting policy (Note 2)	-	-	-	(1,122)	(1,122)	(578)	(1,700)
<b>Restated opening balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,264</b>	<b>\$ 844</b>	<b>\$ (3,671,432)</b>	<b>\$ 9,319,798</b>	<b>\$ (910,713)</b>	<b>\$ 8,409,085</b>
Loss for the year	-	-	-	(150,457)	(150,457)	(326,461)	(476,918)
Other comprehensive loss for the year	-	-	(1,657)	-	(1,657)	-	(1,657)
Employee share plans	-	547	-	-	547	-	547
<b>Closing balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,811</b>	<b>\$ (813)</b>	<b>\$ (3,821,889)</b>	<b>\$ 9,168,231</b>	<b>\$ (1,237,174)</b>	<b>\$ 7,931,057</b>

Year Ended December 31, 2018	Attributable to owners of Turquoise Hill						
	Share capital	Contributed surplus	Accumulated other comprehensive income (loss)	Deficit	Total	Non-controlling Interest (Note 19)	Total equity
<b>Opening balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,102</b>	<b>\$ 3,719</b>	<b>\$ (4,081,508)</b>	<b>\$ 8,912,435</b>	<b>\$ (893,211)</b>	<b>\$ 8,019,224</b>
Income (loss) for the year	-	-	-	411,198	411,198	(16,924)	394,274
Other comprehensive loss for the year	-	-	(2,875)	-	(2,875)	-	(2,875)
Employee share plans	-	162	-	-	162	-	162
<b>Closing balance</b>	<b>\$11,432,122</b>	<b>\$ 1,558,264</b>	<b>\$ 844</b>	<b>\$ (3,670,310)</b>	<b>\$ 9,320,920</b>	<b>\$ (910,135)</b>	<b>\$ 8,410,785</b>

The accompanying notes are an integral part of these consolidated financial statements.

# **TURQUOISE HILL RESOURCES LTD.**

## **Notes to the consolidated financial statements**

**(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)**

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### **1. Nature of operations and liquidity risk**

Rio Tinto plc is the ultimate parent company and indirectly owned a 50.8% majority interest in Turquoise Hill as at December 31, 2019.

Turquoise Hill Resources Ltd. (“Turquoise Hill”), together with its subsidiaries (collectively referred to as “the Company”), is an international mining company focused principally on the operation and further development of the Oyu Tolgoi copper-gold mine in Southern Mongolia. Turquoise Hill’s head office is located at 1 Place Ville Marie, Suite 3680, Montreal, Quebec, Canada, H3B 3P2. Turquoise Hill’s registered office is located at 300-204 Black Street, Whitehorse, Yukon, Canada, Y1A 2M9.

Turquoise Hill has its primary listing in Canada on the Toronto Stock Exchange and a secondary listing in the U.S. on the New York Stock Exchange.

The consolidated financial statements of Turquoise Hill were authorized for issue in accordance with a directors’ resolution on March 20, 2020.

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they become due.

As at December 31, 2019, the Company had \$2.2 billion of available liquidity, split between remaining project finance proceeds of \$0.5 billion, which are drawn and currently deposited with Rio Tinto, and \$1.7 billion of consolidated cash and cash equivalents. The Company’s current assets exceeded current liabilities by \$1.9 billion at December 31, 2019. Furthermore, in the next 12 months, the Company has non-cancellable obligations related to power commitments of \$0.1 billion. The Company expects to fund its current liabilities and current commitments through its liquidity position and from cash flow generated at its existing open pit operations. The Company continues to review its near term operating plans and continues to take steps to reduce costs and maximize cash generated from its existing open pit operations.

The Company manages liquidity risk by the preparation of internally generated short-term cash flow forecasts. These short-term cash flow forecasts consider estimation of future operating costs, financing costs, development capital and cash receipts from sales revenue. Sensitivity analyses are performed over these estimates including the impact of estimated commodity prices on cash receipts.

The Company believes that it has enough liquidity to meet its minimum obligations for a period of at least 12 months from the balance sheet date, to fund its operations and underground development, as well as the progression of a Tavan Tolgoi-based power plant. Taking into consideration the estimated impacts of recently announced increases to underground development capital, as well as delays to first sustainable production, the Company expects to need significant incremental financing to sustain its underground development and construction of the Tavan Tolgoi-based power plant beyond this timeframe.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies

#### (a) Statement of compliance

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”).

These consolidated financial statements have been prepared on a going concern basis, and in making the assessment that the Company is a going concern, management have taken into account all available future information, which extends for a period of at least twelve months from December 31, 2019. Refer to Note 1.

#### (b) Change in accounting policies

##### (i) Leases under IFRS 16

IFRS 16, *Leases*, was effective and has been applied by the Company from January 1, 2019. The Company has applied IFRS 16 using the modified retrospective approach and therefore the comparative information has not been restated and continues to be reported under IAS 17, *Leases*.

On January 1, 2019, the Company recognized a right of use asset of \$14.4 million and a corresponding lease liability of \$16.1 million, recognizing the difference in Equity (\$1.1 million in Deficit and \$0.6 million in Non-controlling interest). The following is a reconciliation of the Company’s operating lease commitments immediately preceding the adoption of IFRS 16 to the lease liability recorded on January 1, 2019:

Operating leases - aggregate of minimum lease payments under non-cancellable leases reported at December 31, 2018	\$ 25,861
Short term leases (under one year) - undiscounted	(3,340)
Finance lease liability already on balance sheet at December 31, 2018	12,057
Effects of discounting on payments included in the calculation of the lease liability (excluding finance lease balances)	(2,942)
<u>Lease liability opening balance at January 1, 2019</u>	<u>\$ 28,188</u>
<u>Less: Finance lease liability already on balance sheet at December 31, 2018</u>	<u>(12,057)</u>
<u>IFRS 16 lease liability opening balance at January 1, 2019</u>	<u>\$ 16,131</u>

The Company applied the following optional practical expedients permitted under the standard:

- For short-term leases (lease term of 12 months or less) and leases of low-value assets (such as personal computers and office furniture), the Company opted to recognize a lease expense on a straight-line basis;
- to exclude any initial direct costs from the measurement of the right of use asset at transition; and
- to apply the use of hindsight when reviewing the lease arrangement for determination of the measurement or term of the lease under the retrospective method.

Refer to Note 2(t) for the complete accounting policy.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(b) Change in accounting policies (continued)*

##### *(ii) IFRIC 23, Uncertainty Over Income Tax Treatments*

This interpretation changed the method of calculating provisions for uncertain tax positions. The Company previously recognized provisions based on the most likely amount of the liability, if any, for uncertain tax positions. IFRIC 23 requires an entity to first consider if it is probable that a taxation authority will accept an uncertain tax treatment. If it is concluded that it is not probable, a probability weighted approach is to be taken for issues for which there are a wide range of possible outcomes. For tax issues with a binary outcome, the most likely amount method still remains. The initial adoption of IFRIC 23 had no impact on the Company's consolidated financial statements.

#### *(c) Areas of judgement and estimation uncertainty*

The preparation of consolidated financial statements in accordance with IFRS often requires management to make estimates about, and apply assumptions or subjective judgement to, future events and other matters that affect the reported amounts of the Company's assets, liabilities, revenues, expenses and related disclosures. Assumptions, estimates and judgements are based on historical experience, expectations, current trends and other factors that management believes to be relevant at the time at which the Company's consolidated financial statements are prepared.

##### *(i) Sources of estimation uncertainty*

Key sources of estimation uncertainty that have a risk of resulting in a material adjustment to the carrying amount of assets and liabilities within the next twelve months are summarized below:

##### *Going concern assessment*

The Company has made judgements, based on an internally generated short-term cash flow forecast, in concluding that there are no material uncertainties related to events or conditions that may cast significant doubt upon the Company's ability to continue as a going concern. Judgements and estimates are made in forming assumptions of future activities, future cash flows and timing of those cash flows. Significant assumptions used in preparing the short-term cash flow forecast includes, but is not limited to, short-term commodity prices, reserves, operating costs, financing costs and development capital. Changes to these assumptions could affect the estimate of the Company's conclusion as to whether there are material uncertainties related to events or conditions that may cast significant doubt upon the Company's ability to continue as a going concern.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### (c) Areas of judgement and estimation uncertainty (continued)

##### (i) Sources of estimation uncertainty (continued)

###### *Recoverable amount of property, plant and equipment*

When an impairment review is undertaken, the recoverable amount is assessed by reference to the higher of value in use (VIU) and fair value less costs of disposal ("FVLCD"). The VIU is the net present value of expected future pre-tax cash flows from the relevant cash-generating unit in its current condition, both from continuing use and ultimate disposal. FVLCD is estimated either from the value obtained from an active market where applicable, or by using a discounted post-tax cash flow model based on detailed life-of-mine and/or production plans. FVLCD will always exceed VIU at Oyu Tolgoi because there is incremental value in its resources that cannot be included in a VIU assessment. Significant assumptions used in the discounted cash flow model include estimates of long-term commodity prices, discount rates, reserves and resources, operating costs, development capital, and scheduling and mine design.

These inputs are based on the Company's best estimates of what an independent market participant would consider appropriate. Changes to these inputs may alter the results of the impairment test, the amount of the impairment charge recorded in the consolidated statement of income and the resulting carrying value of property, plant and equipment.

An assessment of recoverable amount was undertaken as at December 31, 2019; refer to Note 13.

###### *Income taxes - provision for income taxes and composition of deferred income tax assets and liabilities*

The Company must make significant estimates in respect of the provision for income taxes and the composition of its deferred income tax assets and deferred income tax liabilities. The Company's operations are, in part, subject to foreign tax laws where interpretations, regulations and legislation are complex and can be subject to change. As a result, there are usually some tax matters in question which may, on resolution in the future, result in adjustments to the amount of current or deferred income tax assets or liabilities, and those adjustments may be material to the Company's balance sheet and results of operations.

The Company recognizes potential liabilities and records tax liabilities for uncertain tax positions based on its judgement of whether, and the extent to which, additional taxes will be due. The Company adjusts these liabilities as facts and circumstances change. Due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from the Company's current estimate, which could result in material adjustments to the consolidated financial statements. Refer to Note 23 for further information on tax matters between Oyu Tolgoi and the Mongolian Tax Authority.

###### *Recovery of deferred tax assets in Mongolia*

The Company assesses the recoverability of deferred tax assets at each reporting period-end based on future taxable income to determine the deferred tax asset to be recognized. Significant assumptions used to determine future taxable income include: estimates for long-term commodity prices, reserves and resources, operating costs, financing costs, development capital, and scheduling and mine design. Revisions to these estimates could result in material adjustments to the financial statements.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### (c) Areas of judgement and estimation uncertainty (continued)

##### (i) Sources of estimation uncertainty (continued)

###### *Reserves and Resources*

Mineral reserves and resources estimates are based on various assumptions relating to operating matters set forth in National Instrument 43-101. These include production costs, mining and processing recoveries, cut-off grades, long term commodity prices, inflation rates and the costs and availability of treatment and refining services for the metals mined. Cost estimates are based on feasibility study estimates and operating history. The Company estimates its mineral reserves and resources based on information compiled and reviewed by qualified persons as defined in accordance with National Instrument 43-101 requirements.

Estimated mineral reserves are used to determine the depreciation of property, plant and equipment; to account for capitalized deferred stripping costs; to perform, when required, assessments of the recoverable amount of property, plant and equipment; as an input to the projection of future taxable profits which support assessments of deferred income tax recoverability; and to forecast the timing of the payment of decommissioning obligations.

###### *Decommissioning Costs*

The estimate of decommissioning costs is based on future expectations in the determination of closure provisions. Management makes a number of assumptions and judgements including: estimating the amount of future reclamation costs and their timing, inflation rates and risk-free discount rates. These assumptions are formed based on environmental and regulatory requirements and the Company's internal policies. The costs are more uncertain the further into the future the mine closure activities are to be carried out. Actual costs incurred in future periods in relation to the remediation of the Company's existing assets could differ materially from their estimated undiscounted future value. Refer to Note 17 for the Company's total decommissioning obligations recorded in the consolidated financial statements, the undiscounted values and the rate used to discount the liability.

###### *Net realizable value of inventories*

Inventory, including stockpiles of ore, are valued at the lower of weighted average cost and net realizable value ("NRV"). If ore stockpiles are not expected to be processed within the 12 months after the balance sheet date, they are included within non-current assets and net realizable value is calculated on a discounted cash flow basis over the planned processing timeframe for such ore. Evaluating NRV requires management judgement in the selection of estimates for, among other inputs, discount rate, price assumptions, timing of processing and costs to complete.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### (c) Areas of judgement and estimation uncertainty (continued)

##### (ii) Areas of judgement

###### *Impairment indicator of property, plant and equipment*

Judgement is required in assessing whether certain factors would be considered an indicator of impairment. Management considers both internal and external information to determine whether there is an indicator of impairment and, accordingly, whether impairment testing is required. The information considered in assessing whether there is an indicator of impairment includes, but is not limited to, long-term commodity prices, the Company's market capitalization relative to its net asset carrying amount, changes in reserves and resources, and life of mine plans.

###### *Borrowing costs*

Capitalization of borrowing costs related to construction or development of a qualifying asset requires management to make a determination as to whether funds have been borrowed specifically to finance the asset, or form part of the Company's general borrowings. This determination requires management to exercise judgement based on the characteristics of third party debt facilities, and the usage of related funds drawn over the life of these facilities. Factors upon which management bases its judgement include: the estimated duration over which drawn funds are invested prior to utilization for capital expenditure; the quantum and timing of debt drawdown relative to that of expenditure on qualifying assets; and the impact of borrowings at the subsidiary entity level (for example whether such arrangements constitute a refinancing arrangement). Amounts capitalized in relation to general borrowings differ from amounts that would be capitalized in the event of the same borrowings being determined as asset specific.

###### *Depletion and depreciation of property, plant and equipment*

Property, plant and equipment is the largest component of the Company's assets and, as such, the depreciation of these assets has a significant effect on the Company's financial statements.

Mining plant and equipment and other capital assets are depreciated over their expected economic lives using either the units of production method or the straight-line method. Depletion of each mineral property interest is provided on the units of production basis using estimated proven and probable reserves as the depletion basis. A change in the estimated useful life or residual value of a long-lived asset would result in a change in the rate of depreciation for that asset.

For long-lived assets that are depleted or depreciated over proven and probable reserves using the units of production method, a change in the original estimate of proven and probable reserves would result in a change in the rate of depletion or depreciation.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### (c) Areas of judgement and estimation uncertainty (continued)

##### (ii) Areas of judgement (continued)

##### *Income taxes – utilization of tax losses carried forward*

The determination of the ability of the Company to utilize tax losses carried forward to offset income taxes payable in the future and to utilize temporary differences which will reverse in the future requires management to exercise judgement and make assumptions about the Company's future performance. Management is required to assess whether it is probable that the Company is able to benefit from these tax losses and temporary differences.

#### (d) Basis of consolidation

The financial statements consist of the consolidation of the accounts of Turquoise Hill and its respective subsidiaries. All intercompany transactions and balances between Turquoise Hill and its subsidiaries have been eliminated on consolidation. Where necessary, adjustments are made to assets, liabilities, and results of subsidiaries to bring their accounting policies into line with those used by the Company.

Subsidiaries are entities controlled by Turquoise Hill. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. The Company controls an entity if it has power to direct the activities of the entity in a manner that significantly affects its returns, has exposure or rights to variable returns from its involvement with the entity and has the ability to use its power to affect those returns.

The Company consolidates all subsidiaries. The Company's principal operating subsidiary is Oyu Tolgoi LLC ("Oyu Tolgoi"). Wholly-owned subsidiaries of Turquoise Hill together hold a 66.0% interest in Oyu Tolgoi, whose principal asset is the Oyu Tolgoi copper-gold mine located in Southern Mongolia. The remaining 34% non-controlling interest in Oyu Tolgoi is owned by Erdenes Oyu Tolgoi LLC ("Erdenes"), a company controlled by the Mongolian government. The Company has historically funded 100% of the Oyu Tolgoi copper-gold mine's exploration and development costs via equity and debt investments in Oyu Tolgoi and non-recourse loans to Erdenes. Income or loss of Oyu Tolgoi is attributed to the controlling and non-controlling shareholders based on ownership percentage. Non-recourse loans advanced to Erdenes upon the issuance of additional equity interests to Erdenes are accounted for separately and recorded as an offset to non-controlling interest in equity. Unrealized interest on the non-recourse loans to Erdenes, which are recoverable principally through dividends from Oyu Tolgoi or sale by Erdenes of its interests in Oyu Tolgoi, is recognized when payment of the interest can be reliably determined.

#### (e) Currency translation and foreign exchange

The Company has determined the U.S. dollar to be the functional currency of Turquoise Hill and its significant subsidiaries as it is the currency of the primary economic environment in which Turquoise Hill and all of its significant subsidiaries operate. Accordingly, monetary assets and liabilities denominated in foreign currencies are translated into U.S. dollars at the exchange rate in effect at the date of the balance sheet and non-monetary assets and liabilities are translated at the time of acquisition or issue. Revenues and expenses are translated at rates approximating the exchange rates in effect at the date of the transaction. All exchange gains and losses are included in the consolidated statement of income during the year.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(f) Revenue*

The Company generates revenue from the sale of concentrate containing copper, gold and silver. Sales revenue is recognized on individual sales to depict the transfer of promised goods to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods. The Company considers five steps in assessing whether all of the criteria are met:

- identify the contract with a customer;
- identify the performance obligations in the contract;
- determine the transaction price;
- allocate the transaction price to performance obligations; and
- recognize revenue when or as a performance obligation is satisfied.

The Company satisfies its performance obligation and sales revenue is recognized at the point in time when the product is delivered as specified by the customer, which is typically upon loading of the product to the customer's truck, train or vessel. The Company considers that control has passed when there is a present obligation to pay from the customer's perspective; physical possession, legal title and the risks and rewards of ownership have all passed to the customer; and the customer has accepted the concentrate. The Company recognizes deferred revenue in the event it receives payment from a customer before a sales transaction meets all the criteria for revenue recognition.

In order to determine the transaction price, revenue from contracts with customers is measured by reference to the forward price for the commodities for the expected quotation period and the Company's best estimate of contained metal at the date revenue is recognized. Concentrate is provisionally priced whereby the selling price is subject to final adjustment at the end of a period normally ranging from 30 to 180 days after delivery to the customer as defined in the sales contract. The final price is based on the market price at the relevant quotation point stipulated in the contract. At each reporting date, the receivable is marked to fair value based on the forward selling price for the quotation period stipulated in the contract. The change in fair value of the receivable subsequent to the date of revenue recognition is recognized within 'Revenue' on the face of the statements of income and is shown separately as 'other revenue' in the notes to the consolidated financial statements.

Mining royalties paid to the government of Mongolia are included in operating expenses.

#### *(g) Exploration and evaluation*

All direct costs related to the acquisition of mineral property interests are capitalized in the period incurred.

Exploration and evaluation costs are charged to operations in the period incurred until such time as it has been determined that a mineral property has proven and probable reserves and the property is economically viable, in which case subsequent evaluation costs incurred to develop a mineral property are capitalized. Exploration and evaluation costs include value-added taxes incurred in foreign jurisdictions when recoverability of those taxes is uncertain.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(h) Property, plant and equipment*

Property, plant and equipment are recorded at cost, less accumulated depletion and depreciation and accumulated impairment losses. The cost of property, plant and equipment includes the estimated close down and restoration costs associated with the asset.

Once an undeveloped mining project has been established as commercially viable, including that it has established proven and probable reserves and approval to mine by governmental authorities has been given, expenditure other than that on land, buildings, plant and equipment is capitalized under “Mineral property interests.” Ore reserves may be declared for an undeveloped mining project before its commercial viability has been fully determined and approval to mine has been given. Evaluation costs may be capitalized during the period between declaration of reserves and approval to mine as further work is undertaken in order to refine the development case to maximize the project’s return.

Project development expenditures, including costs to acquire and construct buildings and equipment are capitalized under “Capital works in progress” provided that the project has been established as commercially viable. Capital works in progress are not categorized as mineral property interests, mining plant and equipment or other capital assets until the capital asset is in the condition and location necessary for its intended use.

Costs, which are incurred during the commissioning phase, that are necessary for the successful commissioning of new assets, are capitalized. Development costs incurred after the commencement of production are capitalized to the extent they are expected to give rise to a future economic benefit. Borrowing costs related to construction or development of a qualifying asset are capitalized until the point when substantially all the activities that are necessary to make the asset ready for its intended use are complete. Where funds have been borrowed specifically to finance an asset, the amount capitalized is the actual interest on borrowings incurred, net of any returns on invested funds. Where the funds used to finance an asset form part of general borrowings, the amount capitalized is calculated using a weighted average of rates applicable to relevant general borrowings of the Company during the period.

#### *(i) Deferred stripping*

In open pit mining operations, it is necessary to remove overburden and other waste materials to access ore from which minerals can be extracted economically. The process of mining overburden and waste materials is referred to as stripping.

During the development of an open pit mine, before production commences, stripping costs are capitalized as part of mineral property interests and are subsequently amortized over the life of the mine on a units of production basis.

During the production phase, stripping activity is undertaken for the dual purpose of extracting inventory for current production as well as improving access to the ore body.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### (i) *Deferred stripping (continued)*

Stripping costs incurred for the purpose of extracting current inventories are included in the costs of inventory produced during the period the stripping costs are incurred.

In order for production phase stripping costs to qualify for capitalization as a stripping activity asset, three criteria must be met:

- it must be probable that economic benefit will be realized in a future accounting period as a result of improved access to the ore body created by the stripping activity;
- it must be possible to identify the “component” of the ore body for which access has been improved; and
- it must be possible to reliably measure the costs that relate to the stripping activity.

When the cost of stripping related to development which has a future benefit is not distinguishable from the cost of producing current inventories, the stripping costs are allocated to each activity based on a relevant production measure. Generally, the measure would be calculated based on a ratio obtained by dividing the tonnage of waste mined for the component for the period by the quantity of ore mined for the component. Stripping costs incurred in the period related to the component are deferred to the extent that the current period ratio exceeds the historical life of component ratio. The stripping activity asset is depreciated on a units of production basis based on expected production of ore over the useful life of the component that has been made more accessible as a result of the stripping activity. The life of component ratios are based on proven and probable reserves based on the mine plan; they are a function of the mine design and therefore changes to that design will generally result in changes to the ratios. Changes in other technical or economic parameters that impact reserves may also impact the life of component ratios. Changes to the life of component ratios are accounted for prospectively.

Deferred stripping costs are included in “Mineral property interests” within property, plant and equipment. Amortization of deferred stripping costs is included as a cost of production in the period.

#### (j) *Depreciation and depletion*

Property, plant and equipment is depreciated over its useful life, or over the remaining life of the mine if that is shorter.

The useful lives of the major assets of a cash-generating unit are often dependent on the life of the ore body to which they relate. Where this is the case, the lives of mining properties, and their associated concentrators and other long lived processing equipment generally relate to the expected life of the ore body. The life of the ore body, in turn, is estimated on the basis of the life-of-mine plan. In applying the units of production method, depreciation is calculated using the copper content of the ore extracted from the mine in the period as a percentage of the total metal content of the ore to be extracted in current and future periods based on proven and probable reserves.

Development costs that relate to a discrete section of an ore body, and which only provide benefit over the life of those reserves, are depreciated over the estimated life of that discrete section. Development costs incurred that relate to the entire ore body are depreciated over the estimated life of the entire ore body.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### (j) Depreciation and depletion (continued)

Assets within operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the mine are depreciated on a straight-line basis. Depreciation commences when an asset is available for use.

#### (k) Impairment of non-current assets

Property, plant and equipment is reviewed for impairment when events or changes in circumstances indicate that the full carrying amount may not be recoverable.

Impairment is assessed at the level of cash-generating units which are identified as the smallest identifiable group of assets capable of generating cash inflows which are largely independent of the cash inflows from other assets. When an impairment review is undertaken, the recoverable amount is assessed by reference to the higher of VIU and FVLCD.

The VIU is the net present value of expected future pre-tax cash flows from the relevant cash-generating unit in its current condition, both from continuing use and ultimate disposal. For VIU, recent cost levels are considered, together with expected changes in costs that are compatible with the current condition of the business and which meet the requirements of IFRS.

The best evidence of FVLCD is often the value obtained from an active market or binding sale agreement. Where this is not the case, or where neither an active market nor a binding sale agreement exists, FVLCD is based on the best information available to reflect the amount a market participant would pay for the cash-generating unit in an arm's length transaction. This is often estimated using discounted post tax cash flow techniques based on detailed life-of-mine and/or production plans.

The cash flow forecasts are based on management's best estimates of expected future revenues and costs, including the future cash costs of production and capital expenditure, which for FVLCD purposes management believe approximate those of a market participant.

Forecast cash flows for impairment purposes are generally based on management's price forecasts of commodity prices, which assume short term observable market prices will revert to the Company's assessment of the long term price, generally over a period of three to five years. These long-term forecast commodity prices are derived from industry analyst consensus.

The discount rates applied to the future cash flow forecasts represent an estimate of the rate the market would apply having regard to the time value of money and the risks specific to the asset for which the future cash flow estimates have not been adjusted.

Non-current assets that have previously been impaired are tested for possible reversal of the impairment whenever events or changes in circumstances indicate that the impairment may have reversed.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(l) Decommissioning obligations*

The Company recognizes liabilities for statutory, contractual, legal or constructive obligations associated with the retirement of property, plant and equipment, when those obligations result from the acquisition, construction, development or normal operation of the assets. Initially, a provision for a decommissioning obligation is recognized at its net present value in the period in which it is incurred, using a discounted cash flow technique with market-based risk-free discount rates and estimates of the timing and amount of the settlement of the obligation.

Upon initial recognition of the liability, the corresponding decommissioning cost is added to the carrying amount of the related asset. Following initial recognition of the decommissioning obligation, the carrying amount of the liability is increased for the passage of time and adjusted for changes to significant estimates including the current discount rate, the amount or timing of the underlying cash flows needed to settle the obligation and the requirements of the relevant legal and regulatory framework. Subsequent changes in the provisions resulting from new disturbance, updated cost estimates, changes to estimated lives of operations and revisions to discount rates are also capitalized to the related property, plant and equipment. Amounts capitalized to the related property, plant and equipment are depreciated over the lives of the assets to which they relate. The amortization or unwinding of the discount applied in establishing the net present value of provisions is charged to expense and is included within finance costs in the consolidated statement of income.

#### *(m) Inventories*

Concentrate inventory is valued at the lower of weighted average cost and net realizable value. Cost comprises production and processing costs, which includes direct and indirect labour, operating materials and supplies, applicable transportation costs and apportionment of operating overheads, including depreciation and depletion. Net realizable value is the expected average selling price of the concentrate inventory less applicable selling and transportation costs.

Stockpiles represent ore that has been extracted and is available for further processing. Stockpiles are valued at the lower of weighted average production cost and net realizable value. Production cost includes direct and indirect labour, operating materials and supplies, applicable transportation costs, and apportionment of operating overheads, including depreciation and depletion.

Net realizable value is the expected average selling price of the finished product less the costs to get the product into saleable form and to the selling location. If the ore will not be processed and sold within the 12 months after the consolidated balance sheet date it is included within non-current assets and net realizable value is calculated on a discounted cash flow basis over the planned processing of such ore.

Mine stores and supplies are valued at the lower of the weighted average cost and net realizable value.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(n) Taxation*

Income tax expense comprises current and deferred tax. Current tax and deferred taxes are recognized in the consolidated statement of income except to the extent that they relate to items recognized directly in equity or in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date.

Deferred tax is recognized in respect of unused tax losses and credits, as well as temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is measured at the tax rates that are expected to be applied to temporary differences when they reverse, based on enacted or substantively enacted laws at the reporting date.

The Company computes the provision for deferred income taxes under the liability method. A deferred tax asset is recognized for unused tax losses, tax credits and deductible temporary differences, only to the extent that it is probable that future taxable profits will be available against which they can be utilized. Future taxable profits are estimated using an income forecast derived from cash flow projections, based on detailed life-of-mine plans and corporate forecasts. Where applicable, the probability of utilizing tax losses or credits is evaluated by considering risks relevant to future cash flows, and the expiry dates after which these losses or credits can no longer be utilized.

Deferred tax is not recognized for the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss, and differences relating to investments in subsidiaries, associates and joint arrangements to the extent that it is probable that they will not reverse in the foreseeable future.

The Company is subject to assessments by various taxation authorities, who may interpret tax legislation differently from the Company. The final amount of taxes to be paid depends on a number of factors, including the outcomes of audits, appeals or negotiated settlements. Such differences are accounted for based on management's best estimate of the probable outcome of these matters.

The Company must make significant estimates and judgements in respect of its provision for income taxes and the composition and measurement of its deferred income tax assets and liabilities. The Company's operations are, in part, subject to foreign tax laws where interpretations, regulations and legislation are complex and continually changing. As a result, there are usually some tax matters in question that may, upon resolution in the future, result in adjustments to the amount of deferred income tax assets and liabilities; those adjustments may be material.

#### *(o) Employee benefits*

Wages, salaries, contributions to government pension and social insurance funds, compensated absences and bonuses are accrued in the year in which the employees render the associated services.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(p) Cash and cash equivalents*

For the purposes of the consolidated balance sheet, cash and cash equivalents comprise cash on hand, demand deposits and short term, highly liquid investments with an initial maturity of three months or less that are readily convertible into known amounts of cash and which are subject to insignificant risk of changes in value.

#### *(q) Financial instruments*

The Company classifies its financial instruments in the following categories: at fair value through profit or loss, fair value through other comprehensive income or at amortized cost.

##### *Classification*

The Company determines the classification of financial instruments at initial recognition.

The classification of debt instruments is driven by the Company's business model for managing the financial assets and their contractual cash flow characteristics. A debt instrument is measured at amortized cost if the objective of the business model is to hold the debt instrument for the collection of contractual cash flows, and the asset's contractual cash flows are comprised solely of payments of principal and interest ("SPPI").

A debt instrument held under a business model under which financial assets may be either held to collect contractual cash flows or sold is classified as held at fair value through other comprehensive income if the SPPI criteria are met. Any other financial assets are classified at fair value through profit or loss.

Debt instruments are classified as current or non-current assets based upon their maturity date. Equity instruments that are held for trading are classified as fair value through profit or loss. For other equity instruments, on the day of acquisition, the Company is able to make an irrevocable election (on an instrument-by-instrument basis) to designate them as at fair value through other comprehensive income.

Financial liabilities are measured at amortized cost, unless they are required to be measured at fair value through profit or loss (such as instruments held for trading or derivatives) or where the Company has opted to measure at fair value through profit or loss.

##### *Measurement*

#### *a) Financial assets and liabilities at fair value through profit or loss*

Financial assets and liabilities at fair value through profit or loss are initially recognized at fair value and transaction costs are expensed in the consolidated statements of income. Realized and unrealized gains and losses arising from changes in fair value are included in the consolidated statement of income in the period in which they arise. Where the Company has elected to recognize a financial liability at fair value through profit or loss, any changes associated with the Company's own credit risk will be recognized in other comprehensive income.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(q) Financial instruments (continued)*

##### *b) Financial assets at fair value through other comprehensive income*

Investments in equity instruments at fair value through other comprehensive income are initially recognized at fair value plus transaction costs. Subsequent to initial recognition, they are measured at fair value, with gains and losses recognized in other comprehensive income.

##### *c) Financial assets and liabilities at amortized cost*

Financial assets and liabilities at amortized cost are initially recognized at fair value net of transaction costs, and subsequently carried at amortized cost less any impairment charges.

##### *d) Derivative financial instruments*

Derivatives are classified as fair value through profit or loss. Derivatives embedded in financial liabilities are treated as separate derivatives when their risks and characteristics are not closely related to their host contracts. Commodity-based derivatives resulting from provisionally priced concentrate are classified as fair value through profit or loss with changes in value recognized in revenue.

#### *Impairment of financial assets*

The Company recognizes a loss allowance for expected credit losses on financial assets that are measured at amortized cost.

At each reporting date, the Company measures the loss allowance for the financial asset at an amount equal to the twelve month expected credit loss for performing assets and the lifetime expected credit loss if the credit risk on the financial asset has increased significantly since initial recognition. For financial assets that are credit impaired at inception, the Company recognizes the expected lifetime credit loss allowance and any interest income is calculated on the net carrying amount.

Impairment losses on financial assets carried at amortized cost are reversed in subsequent periods if the expected credit losses are reversed after the impairment was recognized.

#### *Derecognition*

Financial assets are derecognized when the investments mature or are sold, and substantially all the risks and rewards of ownership have been transferred. A financial liability is derecognized when the obligation under the liability is discharged, canceled or expired. Gains and losses on derecognition are recognized within finance income and finance costs, respectively. Gains or losses on equity instruments designated as fair value through other comprehensive income remain within accumulated other comprehensive income.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### *(r) Share based payments*

The Company has a Performance Share Unit (“PSU”) Plan, a Restricted Share Unit (“RSU”) plan, and a Director Deferred Share Unit (“DDSU”) Plan.

The PSUs, RSUs, and DDSUs are accounted for at fair value upon issuance and remeasured each reporting period, based on the fair market value of a common share of the Company, and recognized as an expense on a straight-line basis over the vesting period.

#### *(s) Segment reporting*

An operating segment is a component of the Company that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Company’s other components. Operating segments are reported consistently with internal information provided to the chief operating decision maker (“CODM”). The CODM, who is responsible for allocating resources and assessing performance, has been identified as Turquoise Hill’s Chief Executive Officer. Based upon management’s assessment of the above criteria, the Company has one operating segment, Oyu Tolgoi, with its copper-gold mine in Southern Mongolia.

#### *(t) Leases under IFRS 16*

For contracts entered into, or changed, on or after January 1, 2019, at inception of the contract, the Company assesses whether a contract is, or contains, a lease. The contract contains a lease if it conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

To assess this, the Company considers whether:

- The contract involves the use of an identified asset;
- the Company has the right to obtain substantially all the economic benefits from use of the asset throughout the period of use; and
- the Company has the right to direct the use of the asset.

For contracts entered into before January 1, 2019, the Company determined whether the arrangement was or contained a lease based on the assessment of whether:

- Fulfilment of the arrangement was dependent on the use of specified assets; and
- The arrangement had conveyed a right to use the asset. The arrangement had conveyed a right to use the asset if one of the following conditions was met:
  - The purchaser had the ability or right to operate the asset while obtaining or controlling more than an insignificant part of the output;
  - the purchaser had the ability or right to control physical access to the asset while obtaining or controlling more than an insignificant amount of the output; or
  - facts and circumstances indicated that it was remote that other parties would take more than an insignificant amount of the output, and the price per unit was neither fixed per unit of output nor equal to the current market price per unit of output.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 2. Summary of significant accounting policies (continued)

#### (t) *Leases under IFRS 16 (continued)*

The Company recognizes a right of use asset and a lease liability at the lease commencement date. The right of use asset is initially measured at cost. The right of use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the useful life or the end of the lease term. The estimated useful lives of right of use assets are determined on the same basis as those of property, plant and equipment. In addition, they are periodically reduced by any impairment losses and adjusted for certain re-measurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted at the weighted average incremental borrowing rate.

Lease payments included in the measurement of the lease liability comprise: fixed payments; variable lease payments that depend on an index or a rate; amounts expected to be payable under any residual value guarantee, and the exercise price under any purchase option that the Company would be reasonably certain to exercise; lease payments in any optional renewal period if the Company is reasonably certain to exercise an extension option; and penalties for any early termination of a lease unless the Company is reasonably certain not to terminate early.

The lease liability is measured at amortized cost using the effective interest rate method. It is re-measured when there is a change in future lease payments arising from a change in index payment or rate, if there is a change in the Company's estimate of the amount expected to be payable under any residual value guarantee, or if the Company changes its assessment of whether it will exercise a purchase, extension, or termination option.

When the lease liability is re-measured in this way, a corresponding adjustment is made to the carrying amount of the right of use asset, or is recorded in the consolidated statement of income if the carrying amount of the asset has been reduced to nil.

The Company presents right of use assets in Property, plant, and equipment and lease liabilities in Borrowings and other financial liabilities in the consolidated balance sheet.

#### *Comparative period under IAS 17*

In the comparative period, assets that are classified as operating leases are not recognized in the Company's consolidated balance sheet. Payments made under operating leases are recognized in the consolidated statement of income on a straight-line basis over the term of the lease.

The Company classifies leases that transfer substantially all of the risks and rewards of ownership as finance leases. In this instance, the leased assets are measured initially at an amount equal to the lower of their fair value and the present value of the minimum lease payments.

# **TURQUOISE HILL RESOURCES LTD.**

## **Notes to the consolidated financial statements**

**(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)**

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### **2. Summary of significant accounting policies (continued)**

#### *(u) New standards and interpretations not yet adopted*

A number of new standards, and amendments to standards and interpretations, are not yet effective for the year ending December 31, 2019, and have not been applied in preparing these consolidated financial statements. None of these standards and amendments to standards and interpretations are expected to have a significant effect on the consolidated financial statements of the Company.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 3. Operating segment

	Year Ended December 31, 2019		
	Oyu Tolgoi	Corporate and other eliminations	Consolidated
Revenue	\$ 1,166,014	\$ -	\$ 1,166,014
Cost of sales	(742,985)	-	(742,985)
<b>Gross margin</b>	<b>423,029</b>	<b>-</b>	<b>423,029</b>
Operating (expenses) income	(271,547)	50,054	(221,493)
Corporate administration expenses	-	(23,443)	(23,443)
Other income	2,498	216	2,714
Impairment charges	(596,906)	-	(596,906)
<b>Income (loss) before finance items and taxes</b>	<b>(442,926)</b>	<b>26,827</b>	<b>(416,099)</b>
<b>Finance items</b>			
Finance income	29,719	76,616	106,335
Finance costs	(456,382)	446,361	(10,021)
<b>Income (loss) from operations before taxes</b>	<b>\$ (869,589)</b>	<b>\$ 549,804</b>	<b>\$ (319,785)</b>
Income and other taxes	(90,590)	(66,543)	(157,133)
<b>Income (loss) for the year</b>	<b>\$ (960,179)</b>	<b>\$ 483,261</b>	<b>\$ (476,918)</b>
Depreciation and depletion	193,183	(1,131)	192,052
Capital additions	1,753,728	-	1,753,728
Current assets	380,830	2,084,876	2,465,706
Non-current assets	10,311,721	44,967	10,356,688
Current liabilities	486,337	34,312	520,649
Non-current liabilities	10,870,018	(6,499,330)	4,370,688
<b>Net increase (decrease) in cash</b>	<b>(37,813)</b>	<b>86,731</b>	<b>48,918</b>

Revenue by geographic destination is based on the ultimate country of destination, if known. If the destination of the concentrate sold through traders is not known, then revenue is allocated to the location of the concentrate at the time when revenue is recognized. During the year ended December 31, 2019, principally all of Oyu Tolgoi's revenue arose from concentrate sales to customers in China and revenue from individual customers in excess of 10% of Oyu Tolgoi's revenue was \$225.5 million, \$128.0 million and \$120.7 million (December 31, 2018 - \$209.6 million, \$145.1 million, and \$127.8 million).

All long-lived assets of the Oyu Tolgoi segment, other than financial instruments, are located in Mongolia.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 3. Operating segment (continued)

	Year Ended December 31, 2018		
	Oyu Tolgoi	Corporate and other eliminations	Consolidated
Revenue	\$ 1,180,022	\$ -	\$ 1,180,022
Cost of sales	(777,248)	-	(777,248)
<b>Gross margin</b>	402,774	-	402,774
Operating expenses	(284,063)	49,991	(234,072)
Corporate administration expenses	-	(24,370)	(24,370)
Other income	7,105	14	7,119
<b>Income before finance items and taxes</b>	125,816	25,635	151,451
<b>Finance items</b>			
Finance income	46,993	107,675	154,668
Finance costs	(388,388)	335,899	(52,489)
<b>Income (loss) from operations before taxes</b>	\$ (215,579)	\$ 469,209	\$ 253,630
Income and other taxes	165,803	(25,159)	140,644
<b>Income (loss) for the year</b>	\$ (49,776)	\$ 444,050	\$ 394,274
Depreciation and depletion	211,201	-	211,201
Capital additions	1,684,732	-	1,684,732
Current assets	409,733	3,116,854	3,526,587
Non-current assets	9,447,857	337,543	9,785,400
Current liabilities	508,551	25,855	534,406
Non-current liabilities	9,695,964	(5,329,167)	4,366,796
Net increase in cash	67,599	90,685	158,284

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 4. Revenue

	Year Ended December 31, 2019		
	Revenue from contracts with customers	Other revenue (a)	Total revenue
Total revenue:			
Copper	\$ 794,870	\$ (7,060)	\$ 787,810
Gold	353,668	11,338	365,006
Silver	12,932	266	13,198
	<u>\$ 1,161,470</u>	<u>\$ 4,544</u>	<u>\$ 1,166,014</u>

	Year Ended December 31, 2018		
	Revenue from contracts with customers	Other revenue (a)	Total revenue
Total revenue:			
Copper	\$ 899,737	\$ (33,195)	\$ 866,542
Gold	299,820	609	300,429
Silver	12,946	105	13,051
	<u>\$ 1,212,503</u>	<u>\$ (32,481)</u>	<u>\$ 1,180,022</u>

(a) Other revenue relates to gains (losses) on the revaluation of trade receivables.

### 5. Cost of sales

	Year Ended December 31,	
	2019	2018
Production and delivery	\$ 559,066	\$ 568,007
Depreciation and depletion	183,919	209,496
Reversal of provision against carrying value of inventories (Note 9)	-	(255)
	<u>\$ 742,985</u>	<u>\$ 777,248</u>

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 6. Operating expenses

	Year Ended December 31,	
	2019	2018
Oyu Tolgoi administration expenses	\$ 134,573	\$ 117,172
Royalty expenses	64,048	70,782
Inventory write downs (reversals) (a)	(2,161)	14,286
Selling expenses	14,607	26,754
Depreciation	8,133	1,705
Other	2,293	3,373
	<b>\$ 221,493</b>	<b>\$ 234,072</b>

- (a) Inventory write downs (reversals) include net adjustments to the carrying value of ore stockpile inventories and materials and supplies; refer to Note 9.

### 7. Finance items

	Year Ended December 31,	
	2019	2018
Finance income:		
Interest income (a)	\$ 106,335	\$ 154,668
	<b>\$ 106,335</b>	<b>\$ 154,668</b>
Finance costs:		
Interest expense and similar charges	\$ (401,582)	\$ (382,082)
Amounts capitalized to property, plant and equipment (b)	396,922	334,668
Accretion of decommissioning obligations (Note 17)	(5,361)	(5,075)
	<b>\$ (10,021)</b>	<b>\$ (52,489)</b>

- (a) Finance income of \$64.3 million (December 31, 2018 - \$119.7 million) on the related party receivable relates to amounts placed with Rio Tinto under an agreement for cash management services in connection with net proceeds from the project finance facility (refer to Note 22).

- (b) The majority of the costs capitalized to property, plant and equipment were capitalized at the weighted average rate of the Company's general borrowings of 8.5% (refer to Note 13).

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 8. Cash and cash equivalents

	December 31, 2019	December 31, 2018
Cash at bank and on hand	\$ 112,572	\$ 148,040
Money market funds and other cash equivalents (a)	1,539,413	1,455,027
	<b>\$ 1,651,985</b>	<b>\$ 1,603,067</b>

(a) At December 31, 2019, short-term liquid investments of \$210.0 million (December 31, 2018 - \$741.7 million) have been placed with Rio Tinto (refer to Note 22).

### 9. Inventories

	December 31, 2019	December 31, 2018
<i>Current</i>		
Concentrate	\$ 26,801	\$ 69,691
Ore stockpiles	45,713	76,512
Provision against carrying value of ore stockpiles	(908)	(15,636)
Materials and supplies	179,795	185,994
Provision against carrying value of materials and supplies	(75,682)	(73,591)
	<b>\$ 175,719</b>	<b>\$ 242,970</b>
<i>Non-current</i>		
Ore stockpiles	\$ 30,640	\$ 25,005
Provision against carrying value of ore stockpiles	(1,655)	(6,350)
	<b>\$ 28,985</b>	<b>\$ 18,655</b>

During the year ended December 31, 2019, \$743.0 million (2018 - \$777.2 million) of inventory was charged to cost of sales (Note 5).

During the year ended December 31, 2019, net write down reversals of \$2.2 million (2018 – net write down charges of \$14.0 million) were recognized in the consolidated statement of income relating to inventory write off and movement in provisions against carrying value. During the year ended December 31, 2019, inventory on which there was a provision against carrying value of \$15.2 million (2018 - \$4.4 million) was sold and recognized in cost of sales for the year.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 10. Trade and other receivables

	<u>December 31,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
Trade receivables and other	\$ 21,284	\$ 14,623
Due from related parties (Note 22)	5,763	15,641
	<u>\$ 27,047</u>	<u>\$ 30,264</u>

### 11. Prepaid expenses and other assets

	<u>December 31,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
Prepaid expenses	\$ 16,863	\$ 27,285
Amounts prepaid to related parties (Note 22)	82,808	2,928
	<u>\$ 99,671</u>	<u>\$ 30,213</u>

### 12. Receivable from related party and other non-current financial assets

	<u>December 31,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
Current assets:		
Receivable from related party (Note 22)	\$ 511,284	\$ 1,620,073
	<u>\$ 511,284</u>	<u>\$ 1,620,073</u>
	<u>December 31,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
Receivable from related party and other non-current financial assets:		
Receivable from related party (Note 22)	\$ -	\$ 266,211
Marketable securities	3,909	5,566
Other	7,069	7,242
	<u>\$ 10,978</u>	<u>\$ 279,019</u>

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 13. Property, plant and equipment

Year Ended	Oyu Tolgoi			Other capital assets	
	Mineral property interests	Plant and equipment (b)	Capital works in progress		Total
December 31, 2019					
Net book value:					
January 1, 2019 as previously reported	\$ 799,113	\$ 3,263,447	\$ 4,775,745	\$ -	\$ 8,838,305
Impact of change in accounting policy (Note 2)	-	14,431	-	-	14,431
January 1, 2019 restated	\$ 799,113	\$ 3,277,878	\$ 4,775,745	\$ -	\$ 8,852,736
Additions	56,083	430	1,299,162	1,131	1,356,806
Interest capitalized (Note 7)	-	-	396,922	-	396,922
Changes to decommissioning obligations	(32,688)	-	-	-	(32,688)
Depreciation for the period	(46,985)	(144,825)	-	(81)	(191,891)
Impairment charges (c)	(52,007)	(180,192)	(364,707)	-	(596,906)
Disposals and write offs	-	(2,184)	(148)	-	(2,332)
Transfers and other movements	-	175,224	(175,224)	-	-
<b>December 31, 2019</b>	<b>\$ 723,516</b>	<b>\$ 3,126,331</b>	<b>\$ 5,931,750</b>	<b>\$ 1,050</b>	<b>\$ 9,782,647</b>
Cost	1,270,641	4,840,318	6,296,457	1,131	12,408,547
Accumulated depreciation / impairment	(547,125)	(1,713,987)	(364,707)	(81)	(2,625,900)
<b>December 31, 2019</b>	<b>\$ 723,516</b>	<b>\$ 3,126,331</b>	<b>\$ 5,931,750</b>	<b>\$ 1,050</b>	<b>\$ 9,782,647</b>
Non-current assets pledged as security (a)	\$ 723,516	\$ 3,126,331	\$ 5,931,750	\$ -	\$ 9,781,597
Year Ended	Oyu Tolgoi			Other capital assets	
	Mineral property interests	Plant and equipment	Capital works in progress		Total
December 31, 2018					
Net book value:					
January 1, 2018	\$ 834,310	\$ 3,197,491	\$ 3,315,171	\$ -	\$ 7,346,972
Additions	21,137	-	1,328,927	-	1,350,064
Interest capitalized (Note 7)	-	-	334,668	-	334,668
Depreciation for the period	(56,334)	(133,070)	-	-	(189,404)
Disposals and write offs	-	(3,995)	-	-	(3,995)
Transfers and other movements	-	203,021	(203,021)	-	-
<b>December 31, 2018</b>	<b>\$ 799,113</b>	<b>\$ 3,263,447</b>	<b>\$ 4,775,745</b>	<b>\$ -</b>	<b>\$ 8,838,305</b>
Cost	1,247,246	4,729,132	4,775,745	1,152	10,753,275
Accumulated depreciation	(448,133)	(1,465,685)	-	(1,152)	(1,914,970)
<b>December 31, 2018</b>	<b>\$ 799,113</b>	<b>\$ 3,263,447</b>	<b>\$ 4,775,745</b>	<b>\$ -</b>	<b>\$ 8,838,305</b>
Non-current assets pledged as security (a)	\$ 799,113	\$ 3,263,447	\$ 4,775,745	\$ -	\$ 8,838,305

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 13. Property, plant and equipment (continued)

- (a) In addition to property, plant and equipment, at December 31, 2019 current and non-current inventory of \$175.7 million (December 31, 2018 - \$243.0 million) and \$29.0 million (December 31, 2018 - \$18.7 million) respectively, and cash at bank and on hand of \$86.2 million (December 31, 2018 - \$124.0 million) are pledged as security for the project finance facility.

- (b) Plant and equipment comprises owned and leased assets:

	<u>December 31,</u> <u>2019</u>
Plant and equipment owned	\$ 9,773,937
Right of use assets	8,710
	<u>\$ 9,782,647</u>

The Company leases certain assets including warehouse and office facilities as well as transportation equipment, substantially all at Oyu Tolgoi. Information about leases for which the Company is a lessee is presented below:

	<u>Plant and</u> <u>Equipment</u>
<b>January 1, 2019</b>	<b>\$ 14,431</b>
Additional lease post transition date	1,561
Depreciation for the period	(7,282)
<b>December 31, 2019</b>	<b>\$ 8,710</b>

#### (c) Impairment charges

##### (i) At June 30, 2019

On July 15, 2019, the Company provided an update on the Oyu Tolgoi underground project summarizing preliminary estimates for increased capital expenditure for project development and a schedule delay to first sustainable production. These preliminary estimates indicated that first sustainable production could be delayed by 16 to 30 months compared to the original feasibility study guidance in 2016 and that development capital expenditure for the project may increase by \$1.2 billion to \$1.9 billion over the \$5.3 billion previously disclosed. Together, these matters were identified as an indicator of impairment at the Oyu Tolgoi cash generating unit level at June 30, 2019.

The recoverable amount is the higher of Oyu Tolgoi's VIU and its FVLCD. The recoverable amount was determined by a FVLCD model using discounted post-tax cash flows in line with the Company's accounting policy for impairment of non-current assets set out in Note 2 (k).

The recoverable amount of the Oyu Tolgoi cash generating unit was classified as level 3 under the fair value hierarchy. In arriving at FVLCD, post-tax cash flows expressed in real terms were estimated based on detailed life-of-mine plans and discounted using a post-tax real discount rate of 8.3%, and incorporated the range of additional project development capital and schedule delay estimates disclosed above. Long-term forecast copper price of \$3.13 per pound and gold price of \$1,320 per ounce were estimated using industry analyst consensus forecasts. The cash flows reflected in the FVLCD model incorporated a portion of material classified as mineral resources, which contributed approximately 20% of the total recoverable amount.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 13. Property, plant and equipment (continued)

#### (c) Impairment charges (continued)

##### (i) At June 30, 2019 (continued)

The recoverable amount was calculated taking into account a number of mine design options. As studies progress, this will lead to the selection of a preferred development option with detailed cost, scheduling, and production assumptions, which may lead to a change in recoverable amount. The recoverable amount also included high-level risk adjustments to net cash flows to reflect the inherent uncertainty of assumptions for development capital, schedule and mineral resources.

The Company's assessment of FVLCD resulted in a recoverable amount of \$8.7 billion compared to a carrying value of \$9.3 billion at June 30, 2019, resulting in a \$0.6 billion impairment charge in the three month period ended June 30, 2019.

Together with operating costs, development capital, and scheduling and mine design, other significant assumptions in the determination of recoverable amount included the discount rate, long-term commodity prices and the inclusion of mineral resources (in addition to mineral reserves). Reasonably possible movements in these assumptions could have reduced the calculated recoverable amount and increased the impairment charge. An increase in the post-tax real discount rate by 1.0% to 9.3%, with all other inputs remaining constant, would reduce the recoverable amount by \$1.5 billion. A 5% decrease to the long-term copper and gold prices, with all other inputs remaining constant, would reduce the recoverable amount by \$1.3 billion. A 5% increase to the long-term copper and gold prices, with all other inputs remaining constant, would increase the recoverable amount by \$1.2 billion.

##### (ii) Recoverable amount assessment at December 31, 2019

Detailed analysis work has continued to progress into the fourth quarter of 2019 and a number of refinements are still under review to determine the final mine design. Decisions on key underground design elements such as the location of the ore handling system and options for panel sequencing will be taken in the first half of 2020. These will take into consideration the consequential impacts on cost, schedule and other key variables such as project ramp-up profile, peak production and productivity improvements. The definitive estimate review is expected to be completed in the second half of 2020. Whilst key decisions still remain outstanding, a recoverable amount assessment was undertaken at December 31, 2019 to determine whether the refinements in the mine design options that have occurred since the June 30, 2019 impairment test have given rise to further impairment or a reversal of the previous impairment.

The recoverable amount was determined by a FVLCD model using post-tax cash flows expressed in real terms, estimated based on detailed life-of-mine plans and discounted using a post-tax real discount rate of 8.0%. Long-term forecast copper price of \$3.07 per pound and gold price of \$1,343 per ounce were estimated using industry analyst consensus forecasts. The cash flows reflected in the FVLCD model incorporated a portion of material classified as mineral resources, which contributed approximately 20% of the total recoverable amount. Other significant assumptions within the assessment of recoverable amount include operating costs, development capital, and scheduling and mine design.

The recoverable amount was calculated taking into account a number of mine design options. The recoverable amount also included high-level risk adjustments to net cash flows to reflect the inherent uncertainty of assumptions for development capital, schedule and mineral resources.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 13. Property, plant and equipment (continued)

#### (c) Impairment charges (continued)

##### (ii) Recoverable amount assessment at December 31, 2019 (continued)

The Company's assessment of recoverable amount at December 31, 2019 did not result in any additional impairment or impairment reversal being recorded at December 31, 2019. The sensitivity of the calculated recoverable amount to reasonably possible movements in any of the significant assumptions is consistent with the analysis performed in relation to the impairment charge recorded at June 30, 2019.

Subsequent to year-end the novel coronavirus (COVID-19) has had certain impacts on the development work in Oyu Tolgoi – refer to Note 26. The Company's impairment test was based on FVLCD as at December 31, 2019. Accordingly, as required by IFRS, the Company has not reflected these subsequent conditions in the measurement of the Oyu Tolgoi cash generating unit at December 31, 2019.

### 14. Trade and other payables

	December 31, 2019	December 31, 2018
Trade payables and accrued liabilities	\$ 389,476	\$ 395,883
Interest payable on long-term borrowings	9,814	10,906
Payable to related parties (Note 22)	65,903	51,490
Other	1,013	965
	<b>\$ 466,206</b>	<b>\$ 459,244</b>

### 15. Borrowings and other financial liabilities

	December 31, 2019	December 31, 2018
Current liabilities:		
Project finance facility (a)	\$ 22,177	-
Lease liabilities (b)	4,370	-
	<b>\$ 26,547</b>	<b>\$ -</b>
Non-current liabilities:		
Project finance facility (a)	\$ 4,170,058	\$ 4,175,240
Lease liabilities (b)	17,212	12,057
	<b>\$ 4,187,270</b>	<b>\$ 4,187,297</b>

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 15. Borrowings and other financial liabilities (continued)

#### (a) Project finance facility

On December 14, 2015, Oyu Tolgoi signed a \$4.4 billion project finance facility. The facility is provided by a syndicate of international financial institutions and export credit agencies representing the governments of Canada, the United States and Australia, along with 15 commercial banks. The project finance lenders have agreed a debt cap of \$6.0 billion. In addition to the funding drawn down to date there is an additional \$0.1 billion available, subject to certain conditions, under the Company's facility with the Export-Import Bank of the United States, and the potential for an additional \$1.6 billion of supplemental debt in the future. Under the terms of the project finance facility held by Oyu Tolgoi, there are certain restrictions on the ability of Oyu Tolgoi to make shareholder distributions.

At December 31, 2019, Oyu Tolgoi has drawn down \$4.3 billion of the project finance facility:

Facility	December 31, 2019		Original Term (ii)	Annual interest rate	
	Carrying Value (i)	Fair Value (i)		Pre-completion	Post-completion
International Financial					
Institutions - A Loan	\$ 774,858	\$ 862,016	15 years	LIBOR + 3.78%	LIBOR + 4.78%
Export Credit Agencies	874,092	966,989	14 years	LIBOR + 3.65%	LIBOR + 4.65%
Loan	276,428	322,101	13 years	2.3%	2.3%
MIGA Insured Loan (iii)	678,679	747,440	12 years	LIBOR + 2.65%	LIBOR + 3.65%
Commercial Banks	1,588,178	1,755,263	12 years	LIBOR + 3.4%	LIBOR + 4.4%
- B Loan				Includes \$50 million 15-year loan at A Loan rate	
	<b>\$ 4,192,235</b>	<b>\$ 4,653,809</b>			

- (i) The carrying value of borrowings under the project finance facility differs from fair value due to amortized transaction costs, and changes in the estimate of fair value between the initial recognition date and the balance sheet date. Project finance borrowings were initially recognized at fair value less transaction costs on the relevant draw down dates, with aggregate initial fair value being \$4,348.9 million before transaction costs. At December 31, 2019, these borrowings are stated net of \$156.7 million amortized transaction costs.

At December 31, 2019, the fair value of the Company's borrowings has been estimated with reference to a market yield, the variability of which is considered a reasonable indicator, over the pre-completion period, of movements in the fair value of amounts drawn under the project finance facility. Post completion, the fair value has been estimated with reference to the annual interest rate on each tranche of the facility, and consideration of factors that could indicate a change in the credit assessment of Oyu Tolgoi LLC as a counterparty to project finance. These considerations include in-country risk relating to the Oyu Tolgoi project, and the assumed date of transition from pre-completion to post-completion. The transition from pre-completion to post-completion is determined by a set of tests for both completion of physical infrastructure and the ability to extract and process ore of defined grades over a defined period. This is considered a level 3 fair value measurement. Refer to Note 22 (v) for a description of Rio Tinto guarantee arrangements with respect to project finance borrowings.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 15. Borrowings and other financial liabilities (continued)

#### (a) Project finance facility (continued)

- (ii) The project finance facility provides for interest only payments for the first five years followed by minimum repayments according to a stepped amortization schedule for the remaining life of the facility. The maturity analysis of principal repayments is as follows:

	December 31, 2019	December 31, 2018
<b>Maturity analysis - Project Finance facility</b>		
Less than one year	\$ 23,289	\$ -
One to five years	1,893,607	1,193,582
More than five years	2,432,022	3,153,612
	<b>\$ 4,348,918</b>	<b>\$ 4,347,194</b>

- (iii) The Multilateral Investment Guarantee Agency ("MIGA") provides political risk insurance for commercial banks. The Company is required to pay an annual insurance premium of 1.4% of the MIGA Insured Loan for the remaining life of the facility.

#### (b) Lease liabilities

	December 31, 2019
<b>Maturity analysis - contractual undiscounted cash flows</b>	
Less than one year	\$ 4,386
One to five years	15,334
More than five years	2,035
<b>Total undiscounted lease liabilities</b>	<b>\$ 21,755</b>
Lease liabilities included in the Consolidated balance sheet	<b>\$ 21,582</b>
Current	<b>\$ 4,370</b>
Non-Current	<b>\$ 17,212</b>

Lease liabilities are discounted at the weighted average incremental borrowing rate of 7.2%.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 16. Income taxes

#### (a) Tax expense (benefit)

	Year Ended December 31,	
	2019	2018
Current (i)	\$ 10,544	\$ 12,804
Deferred		
Temporary differences including tax losses (ii)	115,343	(175,679)
Withholding taxes (iii)	31,246	22,231
	<u>\$ 146,589</u>	<u>\$ (153,448)</u>
Net income statement expense (benefit) for income taxes	\$ 157,133	\$ (140,644)

#### (i) Current taxes

In 2019, a cash payment of \$2.6 million (2018 - \$4.9 million) was made in respect to current taxes payable. Deferred tax liabilities for withholding taxes are reclassified to current tax prior to settlement.

#### (ii) Deferred tax assets

##### 2019 – Mongolia

Deferred tax assets of \$494.0 million were recognized at December 31, 2019 in Mongolia, comprised of \$169.4 million relating to tax losses that expire if not recovered against taxable income within eight years and \$324.6 million relating to accrued but unpaid interest expense and other temporary differences. Tax losses have been calculated in accordance with the provisions of the Oyu Tolgoi Investment Agreement and Mongolian laws.

The Company recognized deferred tax assets at December 31, 2019 to the extent recovery is considered probable. In assessing the probability of recovery, future taxable income, derived from cash flows from detailed life-of-mine and production plans, were evaluated with reference to commodity price sensitivities, operating cost assumptions, and carry-forward limits.

During the year ended December 31, 2019, the Company decreased its recognized Mongolian deferred tax assets by \$90.1 million. The movement in the Mongolian deferred tax asset represented a decrease of \$187.8 million in the recognized deferred tax asset for prior year losses and other temporary differences, mainly related to property, plant and equipment. This was partially offset by additional operating losses and accrued but unpaid interest expense incurred by Oyu Tolgoi in the year, which increased the recognized deferred tax asset by \$97.7 million.

The adjustment to the previously recognized deferred tax asset for prior year losses and other temporary differences was primarily due to updated operating assumptions in mine planning during the year. This principally included the revised estimation of achievement of sustainable first production, as well as the revised development capital spend for the underground project. The updated mine planning assumptions led to an increase in the amount of loss carry forwards and temporary differences estimated to expire unutilized.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 16. Income taxes (continued)

#### (a) Tax expense (benefit) (continued)

##### *2019 – Canada*

Deferred tax assets of \$40.1 million were recognized at December 31, 2019 in Canada comprised of \$39.6 million relating to non-capital Canadian tax losses carried forward and \$0.5 million relating to other temporary differences. The recognized deferred tax asset decreased during 2019 due to the utilization of non-capital tax losses carried forward against taxable income in the year. Non-capital losses expire if not used to offset taxable income within twenty years.

##### *2018 – Mongolia*

Deferred tax assets of \$584.2 million were recognized at December 31, 2018 in Mongolia, comprised of \$280.1 million relating to tax losses that expire if not recovered against taxable income within eight years and \$304.1 million relating to accrued but unpaid interest expense and other temporary differences. During the year ended December 31, 2018, the Company recognized additional Mongolian deferred tax assets of \$165.9 million, of which \$105.6 million related to 2018 activity. The remaining movement in the Mongolian deferred tax asset was due to an overall strengthening of future taxable income driven by improved long-term commodity price projections and updated operating assumptions in mine planning during 2018. This was partly offset by a reduction of the deferred tax asset recognized for losses incurred in 2016, as the delay to sustainable first production of the underground mine was expected to lead to an increase in the amount of 2016 losses estimated to expire un-utilized.

##### *2018 - Canada*

The deferred tax asset at December 31, 2018 of \$65.3 million was recognized in relation to non-capital Canadian tax losses carried forward.

#### (iii) Withholding taxes

Withholding tax is accrued on interest owing on the loans and recognized within deferred tax liabilities as interest accrues. Mongolian withholding tax will be due upon receipt of loan interest.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 16. Income taxes (continued)

(b) Reconciliation of income taxes calculated at the statutory rates to the actual tax provision

	Year Ended December 31,	
	2019	2018
Income (loss) from operations before taxes	\$ (319,785)	\$ 253,630
Tax at Canadian combined federal and provincial income tax rate (2019: 26.6%; 2018: 26.73%)	(85,063)	67,795
Tax effect of:		
Change in amount of deferred tax recognized	300,237	(152,639)
Difference in tax rates and treatment in foreign jurisdictions	(100,134)	(83,568)
Withholding taxes	31,246	24,670
Non deductible losses and expense	10,847	3,098
	<b>\$ 157,133</b>	<b>\$ (140,644)</b>

The effective tax rate is based on provincial apportionment. During the year, the Company completed the relocation of its head office from British Columbia to Quebec, which affected the provincial apportionment.

(c) Recognized and unrecognized deferred tax assets and liabilities

Recognized and unrecognized deferred tax assets and liabilities are shown in the table below:

	Recognized		Unrecognized	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Deferred tax assets				
Non-capital losses (i)	\$ 208,921	\$ 345,368	\$ 442,686	\$ 276,492
Capital losses	-	-	116,450	120,626
Other temporary differences including accrued interest	325,157	304,053	133,693	11,674
	<b>\$ 534,078</b>	<b>\$ 649,421</b>	<b>\$ 692,829</b>	<b>\$ 408,792</b>
Deferred tax liabilities (ii)				
Withholding tax	(79,180)	(47,934)	-	-
	<b>\$ (79,180)</b>	<b>\$ (47,934)</b>	<b>\$ -</b>	<b>\$ -</b>

(i) Unrecognized deferred tax assets relating to Mongolian non-capital losses for which recovery is not considered probable as at December 31, 2019 expire between 2021 and 2025.

(ii) Deferred tax is not recognized on the unremitted earnings of subsidiaries where the Company is able to control the timing of the remittance and it is probable that there will be no remittance in the foreseeable future. At December 31, 2019, deferred tax liabilities have not been recognized in respect of any unremitted earnings (2018: nil).

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 16. Income taxes (continued)

(c) *Recognized and unrecognized deferred tax assets and liabilities (continued)*

In addition to the above, the Company has \$812.1 million of investment tax credits at December 31, 2019. No deferred tax asset has been recognized in respect of these credits, in accordance with the initial recognition exception in IAS 12 *Income taxes* for transactions that are not a part of a business combination and do not affect accounting or taxable profit.

### 17. Decommissioning obligations

	Year Ended December 31,	
	2019	2018
Opening carrying amount	\$ 131,565	\$ 125,721
Changes in estimates	(32,688)	769
Accretion of present value discount	5,361	5,075
	<b>\$ 104,238</b>	<b>\$ 131,565</b>

All decommissioning obligations relate to Oyu Tolgoi. Reclamation and closure costs have been estimated based on the Company's interpretation of current regulatory requirements and other commitments made to stakeholders, and are measured as the net present value of future cash expenditures upon reclamation and closure.

Estimated future cash expenditures of \$212.6 million (December 31, 2018 - \$273.7 million) have been discounted from an anticipated closure date of 2055 to their present value at a real rate of 2.0% (December 31, 2018 - 2.0%).

### 18. Share capital

The authorized share capital of Turquoise Hill consists of an unlimited number of Common Shares without par value and an unlimited number of Preferred Shares. As at both December 31, 2019 and 2018, there were 2,012,314,469 Common Shares and no Preferred Shares issued and outstanding.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 19. Non-controlling interests

	Non-controlling Interest: Oyu Tolgoi (a)	
	Year Ended December 31,	
	2019	2018
Balance, January 1	\$ (910,135)	\$ (893,211)
Impact of change in accounting policy (Note 2)	(578)	-
Restated balance, January 1	\$ (910,713)	\$ (893,211)
Non-controlling interest's share of loss	(326,461)	(16,924)
Common share investments funded on behalf of non-controlling interest (a)	219,300	175,100
Funded amounts repayable to the Company (a)	(219,300)	(175,100)
<b>Balance, December 31</b>	<b>\$ (1,237,174)</b>	<b>\$ (910,135)</b>

- (a) Since 2011, the Company has funded common share investments in Oyu Tolgoi on behalf of Erdenes. In accordance with the Amended and Restated Shareholders Agreement dated June 8, 2011, such funded amounts earn interest at an effective annual rate of LIBOR plus 6.5% and are repayable to the Company via a pledge over Erdenes' share of future Oyu Tolgoi common share dividends. Erdenes also has the right to reduce the outstanding balance by making payments directly to the Company.

Common share investments funded on behalf of Erdenes are recorded as a reduction to the net carrying value of non-controlling interest. As at December 31, 2019, the cumulative amount of such funding was \$1,240.7 million (December 31, 2018 - \$1,021.4 million). Accrued interest of \$654.9 million (December 31, 2018 - \$505.6 million) relating to this funding, has not been recognized in these consolidated financial statements, as payment will be triggered on common share dividend distribution by Oyu Tolgoi, the certainty of which cannot currently be reliably determined.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 20. Cash flow information

(a) Reconciliation of net income to net cash flow generated from operating activities before interest and tax

	Year Ended December 31,	
	2019	2018
Income (loss) for the year	\$ (476,918)	\$ 394,274
Adjustments for:		
Depreciation and amortization	192,052	211,201
Impairment charges	596,906	-
Finance items:		
Interest income	(106,335)	(154,668)
Interest and accretion expense	10,021	52,489
Unrealized foreign exchange losses (gains)	(131)	851
Inventory write downs (reversals)	(2,161)	14,031
Write off of property, plant and equipment	2,293	3,373
Income and other taxes	157,133	(140,644)
Other items	87	(219)
Net change in non-cash operating working capital items:		
(Increase) decrease in:		
Inventories	31,093	(983)
Trade, other receivables and prepaid expenses	(938)	(8,377)
(Decrease) increase in:		
Trade and other payables	(14,106)	(15,886)
Deferred revenue	(47,266)	7,564
<b>Cash generated from operating activities before interest and tax</b>	<b>\$ 341,730</b>	<b>\$ 363,006</b>

(b) Supplementary information regarding other non-cash transactions

The non-cash investing and financing activities relating to operations not already disclosed in the consolidated statements of cash flows were as follows:

	Year Ended December 31	
	2019	2018
<b>Investing activities</b>		
Change in accounts payable and accrued liabilities related to purchase of property, plant and equipment	\$ 14,324	\$ 26,930

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 21. Earnings per share

Basic earnings per share is computed by dividing the net income attributable to owners of Turquoise Hill by the weighted average number of common shares outstanding during the period. As of December 31, 2019 and 2018, the Company had not issued any equity instruments that are potentially dilutive to earnings per share.

### 22. Related parties

As at December 31, 2019, Rio Tinto plc's indirect equity ownership in the Company was 50.8% (December 31, 2018: 50.8%). The following tables present the consolidated financial statements line items within which transactions with a Rio Tinto entity or entities ("Rio Tinto") are reported. Rio Tinto entities comprise Rio Tinto plc, Rio Tinto Limited and their respective subsidiaries other than Turquoise Hill and its subsidiaries.

Statements of Income	Year Ended December 31,	
	2019	2018
Operating and corporate administration expenses:		
Cost recoveries - Turquoise Hill	\$ 710	\$ 623
Management services payment (i)	(31,041)	(30,055)
Cost recoveries - Rio Tinto (ii)	(42,836)	(40,627)
Finance income:		
Cash and cash equivalents (iii)	16,194	20,175
Receivable from Rio Tinto (iv)	64,285	119,688
Finance costs:		
Completion support fee (v)	(108,712)	(108,421)
	<b>\$ (101,400)</b>	<b>\$ (38,617)</b>
Statements of Cash Flows	Year Ended December 31,	
	2019	2018
Cash generated from operating activities		
Interest received (iii, iv)	\$ 58,850	\$ 72,012
Interest paid (v)	(156,814)	(11,918)
Cash flows from investing activities		
Receivable from related party: amounts withdrawn (iv)	1,375,000	1,270,000
Expenditures on property, plant and equipment:		
Management services payment and cost recoveries - Rio Tinto (i), (ii)	(60,828)	(61,145)



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 22. Related parties (continued)

	December 31, 2019	December 31, 2018
<b>Balance Sheets</b>		
Cash and cash equivalents (iii)	\$ 210,000	\$ 741,711
Trade and other receivables (Note 10)	5,763	15,641
Prepaid expenses and other assets (Note 11)	82,808	2,928
Receivable from related party and other non-current financial assets (iv) (Note 12)	511,284	1,886,284
Trade and other payables (Note 14)		
Management services payment - Rio Tinto (i)	(14,156)	(15,700)
Cost recoveries - Rio Tinto (ii)	(51,747)	(35,790)
	<b>\$ 743,952</b>	<b>\$ 2,595,074</b>

- (i) In accordance with the Amended and Restated Shareholders' Agreement, which was signed on June 8, 2011, and other related agreements, Turquoise Hill is required to make a management services payment to Rio Tinto equal to a percentage of all capital costs and operating costs incurred by Oyu Tolgoi from March 31, 2010 onwards. After signing the Underground Mine Development and Financing Plan on May 18, 2015, the management services payment to Rio Tinto is calculated as 1.5% applied to underground development capital costs, and 3% applied to operating costs and capital related to current operations.
- (ii) Rio Tinto recovers the costs of providing general corporate support services and mine management services to Turquoise Hill. Mine management services are provided by Rio Tinto in its capacity as the manager of Oyu Tolgoi.
- (iii) In addition to placing cash and cash equivalents on deposit with banks or investing funds with other financial institutions, Turquoise Hill may deposit cash and cash equivalents with Rio Tinto in accordance with an agreed upon policy and strategy for the management of liquid resources. At December 31, 2019, cash equivalents deposited with wholly owned subsidiaries of Rio Tinto totalled \$210.0 million, earning interest at rates equivalent to those offered by financial institutions or short-term corporate debt.
- (iv) As part of project finance (Note 15), Turquoise Hill appointed 9539549 Canada Inc., a wholly owned subsidiary of Rio Tinto, as service provider to provide post-drawdown cash management services in connection with net proceeds from the project finance facility, which were placed with 9539549 Canada Inc. and shall be returned to Turquoise Hill as required for purposes of Oyu Tolgoi underground mine development and funding. Rio Tinto International Holdings Limited, a wholly owned subsidiary of Rio Tinto, agreed to guarantee the obligations of the service provider under this agreement. At December 31, 2019, the resulting receivable from 9539549 Canada Inc. totalled \$511.3 million, earning interest at an effective annual rate of LIBOR plus 2.45%. The interest rate reflects: interest receivable at LIBOR minus 0.05%; plus a benefit of 2.5% arising on amounts receivable from 9539549 Canada Inc. under the Cash Management Services Agreement, which are net settled with the 2.5% completion support fee described in (v) below.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 22. Related parties (continued)

At December 31, 2019, the fair value of the receivable approximates its carrying value. The fair value has been estimated with reference to a market yield, the variability of which is considered a reasonable indicator, over the projected timeframe for returning funds to Turquoise Hill, of movements in the fair value of the receivable. This is considered a level 3 fair value measurement.

- (v) As part of the project finance agreements (Note 15), Rio Tinto agreed to provide a guarantee, known as the completion support undertaking (“CSU”) in favour of the Commercial Banks and the Export Credit Agencies. In consideration for providing the CSU, the Company is required to pay Rio Tinto a fee equal to 2.5% of the amounts drawn under the facility. The annual completion support fee of 2.5% on amounts drawn under the facility is accounted for as a borrowing cost and included within interest expense and similar charges (refer to Note 7). The fee is settled net of a benefit arising on amounts receivable from 9539549 Canada Inc. under the Cash Management Services Agreement described in (iv) above. The fee payment obligation will terminate on the date Rio Tinto’s CSU obligations to the project lenders terminate.

The above noted transactions were carried out in the normal course of operations and were measured at the transaction amount, which is the amount of consideration established and agreed to by the related parties.

### 23. Commitments and contingencies

#### (a) Capital commitments

At December 31, 2019, the Company had capital expenditure commitments at the balance sheet date of \$44.5 million. These commitments represent minimum non-cancellable obligations and exit costs for cancellable obligations.

During 2018, Oyu Tolgoi signed a new power purchase agreement with the National Power Transmission Grid (“NPTG”) of Mongolia. The power purchase agreement was executed in connection with the power import arrangement between NPTG and the Inner Mongolia Power International Corporation (“IMPIC”).

The new arrangement took effect on July 4, 2018, subsequent to the expiry of the previous IMPIC agreement, for a term of up to six years, with possibility of early cancelation after the fourth year, if a domestic power plant is commissioned earlier.

At December 31, 2019, the Company had power purchase commitments of \$404.3 million. These commitments represent minimum non-cancellable obligations.

#### (b) Mongolian Tax Assessment

On January 16, 2018, the Company announced that Oyu Tolgoi received a tax assessment for approximately \$155 million (which was converted from Mongolian Tugrik to U.S. dollars at the exchange rate on that date) from the Mongolian Tax Authority (the “MTA”) as a result of a general tax audit for the period covering 2013 through 2015. In January 2018 Oyu Tolgoi paid an amount of \$4.8 million to settle unpaid taxes, fines and penalties for accepted items.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 23. Commitments and contingencies (continued)

#### *(b) Mongolian Tax Assessment (continued)*

The Company was of the opinion that Oyu Tolgoi had paid all taxes and charges required under the 2009 Oyu Tolgoi Investment Agreement (“Investment Agreement”), the Amended and Restated Shareholder Agreement (“ARSHA”), the Underground Mine Development and Financing Plan and Mongolian Law. Following engagement with the MTA, Oyu Tolgoi was advised that the MTA could not resolve Oyu Tolgoi’s objections to the tax assessment.

On February 20, 2020, the Company announced that Oyu Tolgoi will be proceeding with the initiation of a formal international arbitration proceeding in accordance with dispute resolution provisions within Chapter 14 of the Investment Agreement entered into with the Government of Mongolia in 2009 and Chapter 8 of the Oyu Tolgoi Underground Mine Development and Financing Plan entered into with the Government of Mongolia in 2015. The dispute resolution provisions call for arbitration under the United Nations Commission on International Trade Law (UNCITRAL) seated in London before a panel of three arbitrators.

By agreeing to resolve to dispute under UNCITRAL Arbitration Rules, both parties have agreed that the arbitral award shall be final and binding on both parties and the parties shall carry out the award without delay.

Management remains of the opinion that Oyu Tolgoi has paid all taxes and charges as required under the Investment Agreement, ARSHA, the Underground Mine Development and Financing Plan and Mongolian law and in the opinion of the Company at December 31, 2019, a provision is not required for the amount of approximately \$150 million disputed by the Company relating to the years 2013 through 2015 or any additional amounts related to 2016 through December 31, 2019. The amounts that could arise related to 2016 through December 31, 2019 would be material. The final amount of taxes to be paid depends on a number of factors including the outcome of discussions with the government and the outcome of the international arbitration proceedings. Changes in management’s assessment of the outcome of this matter could result in material adjustments to the Company’s statements of income and financial position.

#### *(c) Power Source Framework Agreement*

Oyu Tolgoi is obliged under the Investment Agreement to secure a long-term domestic source of power for the Oyu Tolgoi mine. The Power Source Framework Agreement (PSFA) entered between Oyu Tolgoi and the Government of Mongolia on December 31, 2018 provides a binding framework and pathway for the construction of the Tavan Tolgoi-based power solution for the Oyu Tolgoi mine by June 30, 2023. The power plant would be majority owned by Oyu Tolgoi and situated close to the Tavan Tolgoi coal mining district. The project aligns with the Parliament resolution No.73 (2018) and the government policies to develop a power plant at the Tavan Tolgoi coal fields. On February 17, 2020, the Company announced the submission of the Feasibility Study for the Tavan Tolgoi Power Plant Project (TTPP) to the Government of Mongolia by Oyu Tolgoi. The existing PSFA specifies target dates for milestones to be achieved through mutual cooperation between Oyu Tolgoi and the Government of Mongolia, several of which have now passed. In accordance with the Contingency Arrangements clause 7.4 a ii of the PSFA, Oyu Tolgoi has given notice and is currently seeking a mutually acceptable alternative basis on which to proceed with securing long term domestic power supply for Oyu Tolgoi.

As at December 31, 2019, and 2018, the Company has no capital commitments related to the PSFA or TTPP.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 23. Commitments and contingencies (continued)

Due to the size, complexity and nature of Turquoise Hill's operations, various legal and tax matters arise in the ordinary course of business. Turquoise Hill recognizes a liability with respect to such matters when an outflow of economic resources is assessed as probable and the amount can be reliably estimated. In the opinion of management, these matters will not have a material effect on the consolidated financial statements of the Company.

### 24. Financial instruments and fair value measurements

Certain of the Company's financial assets and liabilities are measured at fair value on a recurring basis and classified in their entirety based on the lowest level of input that is significant to the fair value measurement. Certain non-financial assets and liabilities may also be measured at fair value on a non-recurring basis.

The fair value of financial assets and financial liabilities measured at amortized cost is determined in accordance with accepted pricing models based on discounted cash flow analysis or using prices from observable current market transactions. Except as otherwise specified, the Company considers that the carrying amount of other receivables, trade payables and other financial assets measured at amortized cost approximates their fair value because of the demand nature or short-term maturity of these instruments.

The following tables provide an analysis of the Company's financial assets that are measured subsequent to initial recognition at fair value on a recurring basis, grouped into Level 1 to 3 based on the degree to which the significant inputs used to determine the fair value are observable.

- Level 1 fair value measurements are those derived from quoted prices in active markets for identical assets or liabilities.
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1, that are observable either directly or indirectly.
- Level 3 fair value measurements are those derived from valuation techniques that include significant inputs that are not based on observable market data.

	Total	Fair Value at December 31, 2019		
		Level 1	Level 2	Level 3
Money market funds (a)	\$ 876,126	\$ 876,126	\$ -	\$ -
Marketable securities (a)	3,909	3,909	-	-
Trade receivables (b)	16,881	-	16,881	-
	\$ 896,916	\$ 880,035	\$ 16,881	\$ -

	Total	Fair Value at December 31, 2018		
		Level 1	Level 2	Level 3
Money market funds (a)	\$ 315,808	\$ 315,808	\$ -	\$ -
Marketable securities (a)	5,566	5,566	-	-
Trade receivables (b)	10,936	-	10,936	-
	\$ 332,310	\$ 321,374	\$ 10,936	\$ -

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 24. Financial instruments and fair value measurements (continued)

- (a) The Company's money market funds and marketable securities are classified within level 1 of the fair value hierarchy as they are valued using quoted market prices in active markets.
- (b) Trade receivables from provisionally priced concentrate sales are included in level 2 of the fair value hierarchy as the basis of valuation uses quoted commodity prices.

#### *Financial risk management*

Certain of the Company's activities expose it to a number of financial risks, which include liquidity risk, foreign exchange risk, interest rate risk, credit risk and commodity price risk. The Company does not currently have in place any active hedging or derivative trading policies to manage these risks, since in the opinion of management, the potential exposure is not significant.

#### *Liquidity risk*

Liquidity risk is the risk that the Company will not be able to meet its obligations as they fall due. Refer to additional disclosures around liquidity risk in Note 1.

#### *Foreign exchange risk*

The Company operates on an international basis and therefore foreign exchange risk exposures arise from transactions not denominated in U.S. dollars, its functional currency. The Company is only exposed to foreign exchange risk on its trade payables and accrued liabilities not denominated in U.S. dollars. As at December 31, 2019, the effect on income for the year of a 10% strengthening in the Mongolian Tugrik against the U.S. dollar, with all other variables held constant, would be a charge of \$20.9 million (2018 - \$22.7 million).

#### *Interest rate risk*

Interest rate risk is the risk that the value of a financial instrument or cash flows associated with the instrument will fluctuate due to changes in market interest rates. The Company is exposed to interest rate risk on its third party project finance borrowings and its receivable from related party, the majority of which are at variable rates. As at December 31, 2019, the effect on income for the year of a 100 basis point increase in LIBOR interest rates, with all other variables held constant, would be a charge of \$32.8 million (2018 - \$16.3 million). Cash and cash equivalents have limited interest rate risk due to their short-term nature and receive interest based upon market interest rates or rates equivalent to those offered by financial institutions. As at December 31, 2019, the effect on income would not be significant.



# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

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### 24. Financial instruments and fair value measurements (continued)

#### *Financial risk management (continued)*

##### *Credit risk*

Credit risk is the risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. The Company is exposed to credit risk from its operating activities (primarily from customer receivables) and from its financing activities, including deposits with (and / or receivables from) banks, other financial institutions and Rio Tinto (in its capacity as a counterparty to various deposit and cash management arrangements, and the project finance completion support undertaking – see Note 22), other short term liquid investments and other financial instruments.

The Company manages its customer credit risk subject to the Company's established policy, procedures and controls relating to customer credit risk management. Credit limits are established for all customers based on internal or external rating criteria. The Company deposits its cash and cash equivalents with high credit quality counterparties as referenced by ratings agencies. The Company's maximum balance sheet exposure to credit risk at December 31, 2019 is the carrying value of its cash and cash equivalents, project finance receivable from related party, and its trade and other receivables.

Expected credit losses on trade and other receivables do not have a material impact on the Company's consolidated financial statements at December 31, 2019.

##### *Commodity price risk*

The Company is exposed to commodity price risk from fluctuations in market prices of the commodities that the Company produces. Copper concentrate is "provisionally priced" whereby the selling price is subject to final adjustment at the end of a period normally ranging from 30 to 180 days after delivery to the customer as defined in the sales contract. The final price is based on the market price at the relevant quotation point stipulated in the contract. At each reporting date, the receivable is re-measured at its fair value based on the forward selling price for the quotation period stipulated in the contract. As at December 31, 2019, the Company had 27.9 thousand tonnes of copper in concentrate sales that were provisionally priced. The Company does not have a material exposure to commodity price risk on its provisionally priced copper in concentrate sales at December 31, 2019.

# TURQUOISE HILL RESOURCES LTD.

## Notes to the consolidated financial statements

(Stated in U.S. dollars unless otherwise noted; tabular amounts in thousands unless otherwise noted)

### 24. Financial instruments and fair value measurements (continued)

#### *Financial risk management (continued)*

##### *Capital risk management*

The Company's objectives when managing capital risk are to safeguard its ability to continue as a going concern, to provide an adequate return to shareholders and to support any growth plans.

The Company considers its capital to be share capital and third party borrowings. To effectively manage capital requirements, the Company has in place a planning and budgeting process to help determine the funds required to ensure the Company has the appropriate liquidity to meet its operating needs. The Company seeks to ensure that there is sufficient borrowing capacity and cash to meet its short term business requirements, taking into account its anticipated cash flows from operations and its holdings of cash, cash equivalents and receivable from related party.

### 25. Key management compensation

The compensation for key management, which comprises Turquoise Hill's directors, Chief Executive Officer, Chief Financial Officer, and Chief Operating Officer, in respect of employee services is as follows:

	Year Ended December 31,	
	2019	2018
Salaries, director fees and other short term benefits	\$ 3,520	\$ 1,909
Post-employment benefits	214	27
Share based payment	1,370	1,262
	<u>\$ 5,104</u>	<u>\$ 3,198</u>

### 26. Subsequent event

As announced by the Company on March 16, 2020, the movement of goods and people within Mongolia since January 2020 has been restricted within and across its borders to prevent the spreading of COVID-19. Following the first positive test for COVID-19 in Mongolia on March 10, 2020, the Government of Mongolia increased its restrictions on flights in and out of the country and on the movement of goods and people within and across its borders.

Despite the impact of COVID-19, the open pit of the Oyu Tolgoi mine continues to operate and deliver shipments of copper concentrate to its customers across the border. Work on the underground project continues, but there is restricted access for teams from Oyu Tolgoi, Rio Tinto and the Company's construction partners to oversee development and provide specialist technical services. The availability of specialist service providers at the site is essential to safely continue work on technical activities, including but not limited to such projects as the headframe commissioning of Shafts 3 and 4. The full impact of the slowdown on the underground project is unknown at this time.

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TURQUOISE HILL



2019 Annual Report

Turquoise Hill Resources Ltd.

Suite 3680, 1 Place Ville-Marie, Montréal, Québec, Canada H3B 3P2

TRQ: TSX & NYSE

Turquoise Hill is an international mining company focused on the operation and development of the Oyu Tolgoi copper-gold mine in southern Mongolia.

[turquoisehill.com](http://turquoisehill.com)